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of the association for physical and mental rehabilitation

CORRECTIVE THERAPY

MAY-JUNE, 1961 VOL. 15 NO. 3

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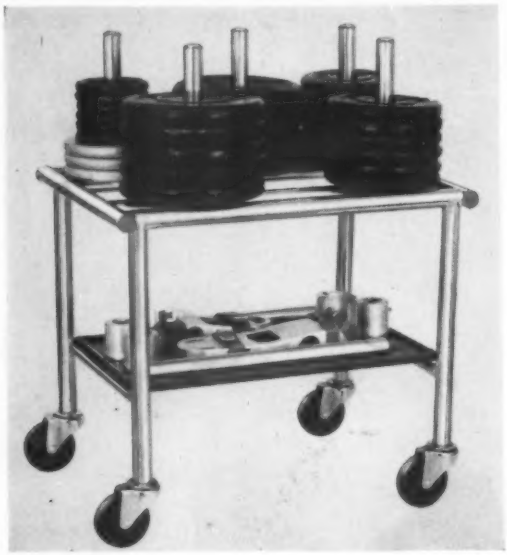

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ARTICLES

DEPARTMENTS

THE JOURNAL OF THE ASSOCIATION FOR PHYSICAL AND MENTAL REHABILITATION

Information For Contributors

MANUSCRIPT: Manuscripts should not exceed ten (10) typewritten pages; approximately 5,000 words. Manuscripts must be the original copy, not a carbon, typed double-spaced with margins of one (1) inch for large type and one and a half (1½) inches for the small.

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REFERENCES: References in the text should be identified by number, *i.e.*, "As Observed by Kendall and Jones (4). All references should be listed at the end of the article in numerical sequence. The following order and punctuation should be observed: Kendall, B.S. and J.E. Jones, Resume of Treatment of Brain-Damaged Cases. *Arch. Neurol. and Psychiat.*, 71:247, June, 1948.

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Tentative Program

Tri-Organizational Scientific and Clinical Conference

Association for Physical and Mental Rehabilitation
Association of Medical Rehabilitation Directors and Coordinators
American Association for Rehabilitation Therapy

July 10-15, 1961

Indiana University Medical Center, Indianapolis

CONFERENCE THEME: "Rehabilitation Pathways for the Handicapped"

General Sessions, July 10, 11, 12

MONDAY—July 10

8:00-8:30—Registration (Mezzanine, Claypool Hotel).
8:30-11:00—MANAGERS' AND MEDICAL DIRECTORS' PANEL ON AGING—Moderator, Edward Mandell, M.D., Chairman, Policy and Evaluation Staff, Office of Administrator, Veterans Administration, Washington, D.C.
PROBLEMS OF OLDER PSYCHIATRIC PATIENTS—Otto Schaefer, M.D., Manager, Veterans Administration Hospital, Danville, Ill.
THE AGING PICTURE—Martin Leeds, Ph.D., Executive Director, Borinstein Home, Indianapolis, Ind.
REHABILITATION OF OLDER PERSONS WITH NEUROLOGICAL PROBLEMS—Lee D. Cady, Manager, Veterans Administration Hospital, Houston, Texas.
ROLE OF PARA MEDICAL SPECIALTIES IN MEETING PROBLEMS OF OLDER PERSONS—Lee H. Schlesinger, M.D., Area Medical Director, Columbus, Ohio.
MEETING THE CRITICAL SHORTAGE OF TRAINED PERSONNEL TO DEAL WITH THE PROBLEMS INCIDENT TO SENESCENCE—J. Herbert Smith, M.D., Deputy Director for Professional Services, Veterans Administration, Washington, D.C.
11:15-12:15—Speakers' Reception (Columbia Club)—by invitation only.
11:00-Noon—Lunch.
12:00-1:00—Disabled Veterans Ceremonies (Monument Circle).
1:30-4:30—Special Program (Riley Room, Claypool Hotel).
5:45—Buffet Dinner and entertainment (Severin Hotel Roof).

TUESDAY—July 11

INDIANA UNIV. MEDICAL CENTER (Rice Auditorium).
8:00-8:30—Registration.
8:30-8:45—Presidents Welcome.
8:45-9:15—THE IMPORTANCE OF THE ASSOCIATIONS TO REHABILITATION—A. B. C. Knudson, Director, Physical Medicine and Rehabilitation Service, Veterans Administration, Washington, D.C.
9:15-9:45—DRUGS IN REHABILITATION—Henry Brill, M.D., Deputy Commissioner, Department of Mental Hygiene, State of New York.
10:00-10:30—INFLUENCING THE MENTAL PATIENT'S ADJUSTMENT TOWARD HEALTH—Ivan Bennett, M.D., Clinical Investigator, Research Department, Eli Lilly Co.
10:30-11:30—Opening of Exhibits (Student Union Building).
11:30-12:45—Lunch.
1:00-1:15—WELCOME—John Van Nuys, M.D., Dean, Indiana University School of Medicine.
1:15-2:00—AN ELECTROMAGNETIC SCREENING METHOD FOR PSYCHIATRIC PATIENTS—Leonard Ravitz, M.D., Eastern State Hosptial.
2:00-2:30—FRAGMENTATION OR UNITY IN HEALTH CARE—A. N. Taylor, Ph.D., Committee Secretary, Committee on Relationships of Medicine with Allied Health Professions and Services, American Medical Assocaition.
2:30-3:30—ELEMENTS RELATING TO THE EFFECTIVENESS OF PROGRAMS FOR REHABILITATING PSYCHOTIC PATIENTS—Richard L. Jenkins, M.D., Director, Psychiatric Evaluation Project, Veterans Administration, Washington, D.C.
3:30-4:00—HUMANICS—Henry Luidens, M.D., Commissioner of Mental Health, State of Ohio.
4:00-5:00—Tour Exhibits.
5:00-7:00—Dinner.
7:00—General Session, Association for Physical and Mental Rehabilitation.
7:00—Wives Bingo Party (Student Union Building).

WEDNESDAY—July 12 (State Hospital Day)

Chairman—Martin W. Meyer, Ed.D., Coordinator of Activity Therapy, Indiana Department of Mental Health.
9:00-9:30—A CONCEPT OF TOTAL REHABILITATION IN A STATE HOSPITAL—S. T. Ginsberg, M.D., Commissioner, Indiana Department of Mental Health.
9:30-10:15—CURRENT MEDICAL KNOWLEDGE IN THE TREATMENT OF MENTAL RETARDATION—Donald H. Jolly, M.D., Superintendent, Muscatuck State School, Butlerville, Ind.
10:15-11:15—COMMUNITY ORGANIZATION FOR TOTAL REHABILITATION OF THE MENTALLY RETARDED—Bernard Dolnick, Superintendent, Fort Wayne State School, Fort Wayne, Ind.
11:30-12:00—Tour Exhibits.
12:00-1:30—Lunch.
1:30-3:00—THE TOTAL REHABILITATION OF THE EMOTIONALLY DISTURBED CHILD—James E. Simmons, M.D., Coordinator of Children's Psychiatric Services, Indiana University School of Medicine; Marion DeMyer, M.D., Director, Children's Service, Larue D. Carter Memorial Hospital, Indianapolis.
3:00-4:00—SPECIAL REHABILITATION TECHNIQUES FOR THE PRE-DISCHARGE PATIENT IN A STATE HOSPITAL—Ernest J. Fogel, M.D., Superintendent, Logansport State Hospital, Logansport, Ind.
4:00-5:00—Tour Exhibits.

Workshop and Training Courses, July 13, 14, 15

Rehabilitation Nursing Training Course—Indiana University Medical Center and Rainbow Room, Severin Hotel.

Hospital Recreation Training Course—Chateau Room, Claypool Hotel, Indiana University Medical Center.

Social Service and Rehabilitation Training Course—Riley Room, Claypool Hotel, Indiana University Medical Center.

Psychology and Rehabilitation Training Course—Severin Hotel and Indiana University Medical Center.

Manual Arts and Industrial Therapy Training Course—Indiana University Medical Center.

Educational Therapy Training Course—V.A. Hospital, Indiana University Medical Center.

Physiatrists and Coordinators Sectional Program—Goodwill Industries.

Sectional Program—Corrective Therapy and Adapted Physical Education

THURSDAY—July 13 (Sheraton-Lincoln Hotel)

Chairman—Elmer R. Ganza, Chief, Corrective Therapy, Veterans Administration Hospital, Indianapolis, Ind.; Presiding—Richard Fowler, President-Elect, Association for Physical and Mental Rehabilitation.

8:00-8:30—Registration (Claypool Hotel).

8:30-9:15—IMPLEMENTING THE PROFESSIONAL FOCUS—Carl Haven Young, Ed.D., President, Association for Physical and Mental Rehabilitation.

9:15-10:00—TOWARD BETTER UNDERSTANDING OF THE ADJUSTMENT PROBLEMS FACING THE HANDICAPPED—Arthur S. Daniels, Ph.D., Dean, School of Health, Physical Education and Recreation, Indiana University.

10:00-10:30—Tour Exhibits.

10:30-11:00—THE ROLE OF PHYSICAL EDUCATION IN REHABILITATION OF THE HANDICAPPED—Robert Yoho, H.S.D., Director, Health and Physical Education, Indiana State Board of Health.

11:00-11:30—CONTRIBUTIONS OF THE SCANDINAVIAN COUNTRIES TO MENTAL REHABILITATION—John E. Davis, Sc.D., Executive Director, Association for Physical and Mental Rehabilitation.

11:30-1:00—Lunch.

1:00-1:20—PROSTHETICS AND PROSTHETIC TRAINING—Carl D. Martz, M.D., Chief, Rehabilitation Service, Indiana University Medical Center.

1:20-1:30—Discussion Period.

1:30-1:40—POST-OPERATIVE QUADRICEPS EXERCISE—F. Roberts Brueckmann, M.D., Orthopedic Department, Indiana University Medical School.

1:40-2:00—Discussion Period.

2:00-2:30—CONSERVATIVE APPROACH TO LOW BACK PAIN—Robert C. Coddington, M.D., Resident in Orthopedics, Captain, Medical Corps, USMC.

2:30-2:45—Discussion Period.

3:00—Three Car Race at Indianapolis Motor Speedway.

6:00—Smorgasbord and Entertainment (Brody's Night Club).

FRIDAY—July 14

8:00-8:30—Registration (Claypool Hotel).

Chairman—Carl Alsberg, CCT, Sepulveda, Calif.

8:30-9:00—THE PHYSICAL EDUCATOR'S RESPONSIBILITY IN THE REHABILITATION OF THE ATYPICAL STUDENT—Robert E. Shelton, Associate Professor of Physical Education, University of Illinois.

9:00-9:20—SWIMMING PROGRAM FOR INDIVIDUALS WITH CEREBRAL PALSY—Speaker to be announced.

9:20-9:40—ADAPTED PHYSICAL EDUCATION FOR INDIVIDUALS WITH BRAIN DAMAGE OR BACK INJURIES—Willard P. Ashbrook, Ph.D., Department of Physical Education, Ohio State University.

9:40-10:00—Coffee Break.

10:00-10:30—WHAT IS LEFT IS IMPORTANT—Thomas J. Clark, Coordinator of Activity Therapies, Department of Mental Hygiene and Correction, State of Ohio.

10:30-11:30—REHABILITATION OF THE FARM CARDIAC—W. H. M. Morris, Ph.D., Department of Agricultural Economics, Purdue University, sponsored by Indiana Heart Association.

11:30-1:00—Lunch.

1:00-2:30—CORRECTIVE THERAPY—Louis Newman, M.D., Chief, Physical Medicine and Rehabilitation Service, V.A. Research Hospital, Chicago.

2:30-3:00—Coffee Break.

3:00-3:45—THE KENTUCKY RESEARCH STUDY ON SCHOOL PHYSICAL TRAINING—Ernst Jokl, M.D., University of Kentucky.

3:45-4:10—CORRECTIVE THERAPY CLINICAL TRAINING PROGRAM—John R. Endwright, Ph.D., Assistant Dean, School of Physical Education, University of Indiana.

4:10-4:30—CORRECTIVE THERAPY IN PRIVATE PRACTICE—Louis F. Mantovano, Rockville Centre, N.Y.

4:30-4:45—SELF HELP METHOD FOR LACING SHOES—Elmer R. Ganza, Chief, Corrective Therapy, Veterans Administration Hospital, Indianapolis.

7:00—Banquet.

SATURDAY—July 15

Student Union Building, Indiana University Medical Center

8:30—PHYSICAL MEDICINE WORKSHOP—Israel Muss, M.D., Chief, Physical Medicine and Rehabilitation Service, Veterans Administration Hospital, Louisville, Ky.; Leo Rosenberg, M.D., Chief, Physical Medicine and Rehabilitation Service, Veterans Administration Hospital, Dayton, Ohio.

DR. CASEY EMPHASIZES COMMUNITY COOPERATION IN READJUSTMENT PROCESS

The new trend in treatment of mental illness is for the community to supplement the work of hospitals to return patients to normal life according to Dr. Jesse F. Casey, director of the Veterans Administration psychiatry and neurology service in Washington, D.C. Dr. Casey said hospitals cannot do the job alone. Hospitalization is only one phase in treatment of mental illness, he explained, and the last stage of recovery involves becoming a recognized part of society.

The hospital, no matter how helpful to the patient during his acute illness, is not the normal environment for mankind, Dr. Casey pointed out. The recovering mental patient needs to be accepted as an individual by the community again, just as is the person who returns from hospitalization for physical illness. This involves acceptance by employer, fellow workers, neighbors, and into church and other community activities according to Dr. Casey. Local organizations may play a great role in helping this transition back to normal life.

"Viewing mental illness as a condition requiring permanent hospitalization leads to an attitude of hopelessness," Dr. Casey said. "Although some mental patients have to return for hospitalization from time to time, the months or years they are able to spend in the community represent a gain to them and to society."

ARTHRITIS ACCOMPANIES INTESTINAL DISEASES

A severe form of arthritis seems to be associated with the two intestinal conditions, ulcerative colitis and ileitis, Veterans Administration research indicates. Why, VA doctors do not know. They can only speculate that perhaps the intestinal conditions and the arthritis may be manifestations of one general disorder.

Searching through records from the VA's nationwide hospital system, Dr. E. D. Acheson collected information on ulcerative colitis patients and on those with regional ileitis, inflammation of the small intestine that often leads to intestinal obstruction. He found a surprising number of these patients also had "ankylosing spondylitis," a form of arthritis in which the bones of the spinal column become fused together. This sort of arthritis occurred about 20 times as frequently in VA patients with ulcerative colitis and regional ileitis as in all patients discharged from VA hospitals.

Dr. Acheson said the arthritis clearly cannot be regarded as a complication of either of the intestinal diseases, for symptoms of the arthritis came first in a majority of cases.

The research was part of the VA's series of studies in geographic epidemiology, in which VA hospital records are used to pinpoint the distribution of diseases in this country.

Dr. Acheson headed the study at the VA Central Office in Washington, D. C., while he was the Radcliffe Traveling Fellow of University College, Oxford, England. He has returned to Oxford.

PANEL

HUSBANDING HUMAN RESOURCES THROUGH EDUCATIONAL SERVICES*

THE SCHOOL'S ROLE IN REHABILITATION

Driving west a teacher suddenly turned from the inside lane of traffic without signaling or giving other noticeable evidence of her intention of turning in front of oncoming traffic. The impact was fairly remarkable as her car was struck by an auto in the parallel lane. The driver of the second car interrogated her rather angrily, saying "My word, lady, why in the world didn't you signal when you crossed the traffic lane like that?" Although rather shaken the teacher replied, "Well, for goodness sakes, man, don't be silly — why should I? I've been turning here for years!"

Sometimes we determinedly continue in our patterns of activity without paying sufficient attention to what is going on in the lane next to us. Some people still hold that rehabilitation belongs in the traditional clinic or hospital scene, but we in schools like to maintain the broader view. Rehabilitation has many aspects, and some of these aspects involve the school and the school age child.

In the Los Angeles City School System we feel that the very title of our branch, Health Education and Health Services, implies the broad scope we feel appropriate in a school's effort to help children. Not only do we feel responsibility for helping children, but we feel that we have the responsibility of helping teachers and other members of the staff to understand better their contribution to the child's health as well as to the child's academic needs.

School physicians everywhere who serve the school population have much to do with a program of prevention of disease and restoration to health which is implicit in their interest in the health of the school child.

Rehabilitation is not done by any one discipline but is the result of the real collaborative effort of all who work with the disabled individual. In the school rehabilitation program the team approach is similar. All of us working together are making a unique and important contribution to the restoration of the disturbed or disabled child. We like to think in terms of collaboration. The teacher has an important contribution as does the psychologist, the corrective teacher, the therapist, the orthopedist.

The type of defect found in the school population is changing, as is the type of defect found everywhere. We find more children coming to school with very limited intelligence, for example. Delicate newborns are being saved by modern medicine. Children now are coming to school with severe mental handicaps. Children with severe physical handicaps are asking for a place. Finding these children early is important. Our increasing knowledge makes us feel that very early in infancy detection of certain disabling processes in children may lessen the future demand for rehabilitation services.

We recognize also that one of the major functions of a school health program is still the detection of defects. We hope that this physical scrutiny carries with it overtones to the child that will help him understand his own health situation better and give the pupil ideas as to how he can protect and guard his health.

We have responsibilities as physicians, dentists, school nurses, corrective teachers or other specialists in the school health field to do some actual health education as well. Each year thousands of talks are given to pupils by members of the school health staff. Furthermore, we may serve as resource people to the classroom teacher to help her enrich her own health instruction program in her daily teaching activities.

The health educator who works in cooperation with the health staff employs his particular skills as an important member of the health team.

The school health program has evolved in a way appropriate to the changing times and knowledge in the field of medicine and is vastly different from the school health program at the turn of the century or even two decades ago. Currently we recognize that no worthwhile program of disease prevention, restoration and rehabilitation is being done by any single discipline. New words have come into our vocabulary; new ideas and concepts into our thinking. Over and over we express the importance of the "team approach" and that all members of the team are necessary and important in the restor-

*Presented at Third Tri-Organizational Clinical and Scientific Conference,, Santa Monica, Calif., June 16, 1960.

ation of the disturbed or disabled child to levels of function available to him. The word "collaboration" implies this working together to understand the needs expressed by pupils, parents and staff. Through this understanding we develop a program of prevention of or rehabilitation from disabling defects. With improved methods of infant care through the use of antibiotic drugs and other lifesaving measures children survive serious illness, but often survive with a variety of crippling defects. As stated, our schools have more children in attendance who have limited intelligence or are delicate children saved through the miracles of modern medicine. Some of these children come to school with very severe mental and physical handicaps. We find increasing numbers of them on the school doorstep clamoring for a place in the classroom.

In the Los Angeles City Schools we hope that with increasing skill our physicians' staff of "110 medical", our 350 public health nurses, our 16 otologists, 16 dentists, corrective teachers, eye, ear, heart, chest, orthopedic and other specialists are finding and helping disabled pupils. We are discovering thousands of children who need minor or major physical or emotional care, our statistics show.

Through our schools for the handicapped, we offer rehabilitative assistance as well as an academic program to even the most delicate in our community; children who could not make a go of it in the regular school, although many have been tried in a regular school situation.

On the elementary level we have four schools for children who are "physically handicapped" to which children are brought by school bus, and during the school day receive individual and specialized services that make it possible for them to stay in school. We challenge the point of view that "special programs are inadvisable, that we should integrate our children, though limited, into the regular school program." To a large part we agree but too frequently when this policy is adopted one finds many children with severe limitations receiving home teaching or no other help at all. Through our program for handicapped children we feel we can serve those who are so limited that adjustment to the regular school program is too taxing or impossible. We believe that most of our limited children are being handled in the regular class situation with no modification or some modification being made of the regular school program as indicated. However, we are glad to have school opportunity also for the severely limited pupil.

A survey done in Los Angeles City Schools in 1950 indicated that according to our school nurses' report, 333 pupils were attending school with some type of convulsive disorder, only 66 of whom were assigned to schools for the handicapped. Surely as we try to help children we should help them to live in a normal community as rapidly as they are able. The normal school community is ideal for any child if he can adjust to the normal school community without loss to himself or jeopardy to his classmates or the program.

For many limited children a short time in a special school helps them to gain in physical and academic strength to the point that they can adjust to the rather full life of a regular school. Some must always accept their limitations and learn to live with them in a limited school environment and in a limited adult environment.

Currently in the central district of Los Angeles we have 167 pupils in our special schools for crippled children of the high school age group. Of these 45 have cerebral palsy, 50 are post-polio, 18 have had fractures, amputations and miscellaneous problems of bones and joints, 4 are suffering from arthritis, 4 have had tuberculosis, 20 have other orthopedic defects, 10 have rhumatic fever and related limitations, 10 have epilepsy, 4 have asthma and 6 are in a group of "miscellaneous illnesses." Again we feel that this is not an inordinate number of pupils to be placed in a special high school, when you consider the size of our metropolitan area and our school population.

Of the pupils enrolled in our school for handicapped it has been estimated that 34% have intelligence quotients under 75. This means that we are handling a large number of pupils who are "doubly handicapped" in our special schools; children who have limited mental ability as well as physical handicaps. There is an increasing number of doubly handicapped children in our school population.

Some of the pupils from our high school for handicapped go on to college and university. About 3% enter university programs and about 20% or 30% of the pupils being graduated from our special schools for handicapped enter college.

When the pupil reaches the high school level we think in terms of plans for preparation for life work. We get a great deal of help from the Civilian Rehabilitation — Senior High — Services offered through the Board of Education offices of which Dr. Carl Etter is supervisor.

Another way we hope to prepare young people for more effective life is through our corrective program—corrective physical education. Last year 70,000 pupils enrolled in our special classes for postural de-

specialists from UCLA Medical Center, who gave service to our orthopedic clinics in our special classes by our orthopedic specialists. Others were considered able to leave the special corrective classes, and to return to regular physical education activities.

We hope, also, to maintain pupil health through the Parent-Teacher Health Centers. Pupils seen by school physicians are referred to the health centers for two reasons — one for diagnosis so that their health problems can be more clearly understood in relation to their school programming, and their physical limitations described and necessary referrals made for care, and, secondly, because they need treatment which they cannot afford through private means.

Children who are assigned to our treatment clinics are carefully socially serviced to be sure they fit according to the financial eligibility standards. If pupils are found to be ineligible, they are referred to their family physicians or to private clinics for care. In our orthopedic and corrective program we are finding defects early and doing what is possible to correct them.

Before the pupil is referred to the orthopedic specialist by the school physician the beginning screening examination is usually done.

Rehabilitition of some of our pupils in distress is through our school guidance clinics and our total guidance program. Many pupils are emotionally and mentally handicapped. Pupils who show emotional distress may be referred to the school physician or nurse who may refer them for further care in one of our five child guidance clinics. Child psychiatrists, psychiatric social workers, clinical psychologist and psychiatric nurse staff our clinics. With the traditional clinic team approach they offer various kinds of help, from diagnostic services to brief service. The school guidance clinic cooperates and collaborates with the school staff, referring children back to the regular classroom whenever possible. Children who are too deeply disturbed, needing more intensive or prolonged therapy, are referred to outside agencies.

The close cooperation with all the official agencies and voluntary agencies in our community is of extreme importance to schools. In a recent study, it was found that of school personnel, school nurses made the second largest number of referrals among the school personnel to outside community agencies for assistance.

It is true that we must work together if we are to husband human resources. Those of us working with the young child or the early teenager in the school situation must look carefully to see what the human resources really are and remember always that no matter how great the handicap we must find in each pupil what can be helped and what can be worked with. School people, as well as others, have a serious and important responsibility to help the slightly limited and the grossly limited pupil. America needs them all.

HARRIETT B. RANDALL, M.D.,
Assistant Director,
Health Education and Health Services Branch,
Los Angeles City Schools.

MUNICIPAL PROGRAMS FOR THE MAINTENANCE OF TOTAL FITNESS

I come from the Long Beach Unified School District where we have around 400,000 population, so it's not a colossus like New York, Chicago or Los Angeles. We have a rather unique organization in which Municipal and School Recreation are coordinated and operated as a single department. There are a few other cities that have this plan in general, but I think our's is set up a little stronger in one way. Instead of being provided for by an ordinance passed by the City Council or by an informal agreement, it is set up as a Charter Amendment by vote of the people and can be changed only by the same method. All the physical education, the recreation and some of the health education of schools and all public recreation in the entire city are coordinated in one department, under one authority and with one director. A policy-forming Recreation Commission, with the director, makes coordination of school and municipal programs possible.

In many cities you have a school department of recreation, Board of Education minded, entirely separate from the city department of parks and recreation, while in Long Beach the two are combined. Of course it is quite a chore for the director to deal on one hand with the City Council-Manager setup and on the other with Board of Education, school officials and staff, but let me tell you this — our system works well, and has been effective for 30 years! In our town there is one general rule as far as community recreation is concerned and this is also important in the therapeutic field. *Whenever a school, or its athletic field, gymnasium, pool or playground is not required for school purposes it is administered entirely through the Director's office for public recreation.* There is no bickering between officials connected with the city, schools, parks, play-

grounds, gyms or athletic fields because all these are centered under one commission and one director.

In our city a very close connection is maintained also with the agencies that have to do with your subject interest. We are closely identified with the community welfare council, coordinating council, senior citizens committee and such organizations as the American Cancer Society plus many others I could name. We think our total program in health, physical education and recreation fully meets the objectives of the national physical fitness program. I will explain the use of our facilities in greater detail. Let's say the school year is over today, which it happens to be, and we have the summer before us. Now under this setup we can use the school woodshops, gyms, playgrounds, auditoriums, or swimming pools without cost from the point of view of city reimbursing school district, except for necessary staffing and maintenance. All the city's recreation resources are also used in the combined program, and the Board of Education does not pay for their use. In this case city recreation areas include the parks, beaches, athletic fields, tennis courts, youth and senior citizen clubhouses, pools and so on.

Potentially all the people of our city and school district are patrons of this program, in addition to many from neighboring communities. We have participants by literally the millions each year. If beach attendance is counted, the present total of recreation attendance in our community approximates 14,000,000. That will give you some idea of the scope. We have 28 new school gymnasiums, that is, built since 1950, with facilities for health, physical education, recreation and correctives.

I don't have time to dwell on it, but I just want to say one or two things about city recreation. Someone told me here today that another speaker said that in a few years about half the people in this nation would not be at work much of the time each day. This gives us a real challenge because while I think we have wonderful programs in cities like ours, having over 100 different types of recreation, we haven't seen anything yet when it comes to providing activities for all this coming leisure. I want to give you just one illustration, if you please. We have what is called the "Golden Tours Club", starting it two years ago with twelve people at the first meeting, and as of today we have more than 1,000 senior citizens signed up and participating actively. It works this way. One of our supervisors arranges trips to points of interest all over Southern California. We charter buses, special buses by reservation, and each member pays his own way. Members get the entire trip, including lunch, for $3.00 to $4.00 and enjoy a fine all-day trip without further responsibility. To show you how the therapy comes in, here is the case of one individual. A man of wealth, he and his wife loved to take car trips, but upon growing old his driver's license was taken away. After nearly dying of boredom, they joined the club and now don't have to sit in a rocker all day.

We have hundreds of people well along in years who get their therapy through handcrafts, music and the arts. No longer when we say the word recreation do we think only of a movie or ball game. All the scope is there — travel, the arts, music, spectator as well as participation sports, parks, beaches, or pools, and all manner of social activities. These can also be adapted for the younger but handicapped person, and many help in developing vocational or avocational skills of value throughout life.

Now I know what your main interest is, and want to get quickly over to the special field you expect to hear discussed, the adapted program for handicapped children in our school district. The subject has been quite well covered here today, but I want to bring out one or two points for emphasis only. Some years ago I attended a meeting in Los Angeles when the State Department of Education was preparing to publish instructions on physical education for individual needs, including those of the physically handicapped, and the question was this, "What percentage of students in a district, or a typical school, should be diverted into special corrective, modified or rest classes?" And do you want to hear something interesting? In a room full of school people, the estimates ranged from 1% all the way to 75%. I stated that in Long Beach we were trying to be practical and skim off the worst 8% of all students as a maximum figure and that is what we've done for many years. This has consistently come very close to our actual needs.

It has been pointed out by Dr. Randall that here the state reimburses the district for excess costs in caring for these special students. It costs about $382 to educate one normal student in our district, and could cost as much as $1,300 if he is severely handicapped. In orthopedic cases it doesn't usually cost that much, however, because the state picks up the difference between $382 and the actual cost, up to a maximum of about $900 per student. Who would say these youngsters aren't worth such an investment, or more if necessary?

You often run into a lot of funny things, you know, with school administrators that don't know your field too well. I heard an assistant superinten-

dent stand up in a meeting one day and say, "It's ridiculous! Out here at this school they want to give a kid credit for laying on a cot during the physical education period. Nonsense! He shouldn't get any grade at all." Later I took that fellow on in a little debate and said "If this boy was your kid and the doctor said the best thing you could do for him from a physical standpoint is to have him lie down for one hour each day, I think you'd want the child to lie on the cot and get credit." It seems queer that a person smart enough to be a school administrator couldn't see this point. Well, we've finally won our point, and some students now get credit for resting. If they are real good resters they can get an "A". Why not? In many cases it is more important to their welfare then playing football.

It has always been my philosophy that if a child is handicapped, why in the world do we want to make him further feel down-graded, inferior, unwanted and unimportant by making him a monitor for the others, sending him to study hall, or assigning some silly chore that isn't necessary. We have also come a long way since the day when a teacher would stand in front of a physical education class, after some child had done some little thing that required discipline, and commanded "All right, Joe, four laps around the track!" What that teacher didn't know was that maybe Joe hadn't had a physical exam for a year or so, and was a cardiac who might drop dead on the third lap. We have come a long way, I repeat, in the public schools in getting away from these old procedures and into the new concepts that these persons are important, that children often have widely divergent individual needs and we should work harder than ever to habilitate the handicapped. We must work harder with these kids than with the others, in fact, as their needs are greater.

I think the schools are doing a better job today in training teachers, although more preparation for adapted work is still needed. In my opinion teachers who are assigned to special classes just because they have open periods and no other qualifications, aren't worth a hoot. I would rather put them anywhere else than with handicapped youngsters. We need dedicated teachers with specialized corrective training — who know what they are doing and can distribute their time efficiently among the kids who need this help. I heard a quotation the other day that I thought was pretty good. Someone said a person "would work eight hours a day for pay, 12 hours for a good boss, and 24 hours for a dedicated cause." I think this is where dedicated special teachers for the handicapped come into the field. There's a lot of frustration for the average teacher trying to do this kind of work. He often feels frustrated because he has not had sufficient specialized training in caring for the needs of the handicapped, and thus is actually inadequate for the job. But with the improving preparation by our educational institutions, I think you will begin to find that corrective teachers may not have every child lined up exactly the way he should be, but that they are on the right track.

In closing, I feel that the dedicated person with adequate training — I'll underline that — the person with good leadership and personality, who is friendly and helpful, is the type teacher the handicapped must have. They don't necessarily have to have the time sense of a geologist to see results, which are apparent a little quicker than that, but must be patient and perserving. The average teacher that isn't dedicated to and specialized in this field would much rather teach normal kids. What I am hoping to live long enough to see, and see in the near future, is the type of teacher for these special classes who has at least one-half the interest in teaching those kids to make their own way in society, that the average football coach has in coaching a winning team. I thank you very much.

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THE SCHOOL'S RESPONSIBILITY FOR THE CONSERVATION OF HEALTH

Many who labor in the sphere of medical science pull their blinders about their eyes and like the Pharasee of old "thank God they are not as other men." They congratulate themselves on having set their course on a star which seems to have boundless possibilities. In twenty miracle-packed years, and to mention only a few startling achievements, they have seen the development of sulpha drugs, penicillin, the mycins, open heart surgery, and radioactive medicine. But one has only to reflect on events in the world about him to conclude that medicine has no corner on change. "The enchanting miracles of change" are all about us. Like medicine, education has had its changes and its problems. Like medicine, education has found that not all change is growth as not all motion is forward.

The educator and his school health worker has been doubly blessed by the stimulation of change. They not only have had their own inherent problems in education to treat, but they have tried to grasp the practical advances in science and have

tried to masticate them educationally, and then have attempted to deliver it to pupils hoping to increase their knowledge and change their habits and attitudes. In these days of change, what to teach the school population becomes a difficult decision. Yesterday's curriculum is old fashioned today; today's books will be outworn tomorrow.

Unaware of the statistical fallacies in medical literature, and with the public press weaving their sensational but delusive dreams, the educator has been hard pressed to find the truth. And then, after verification, he must decide how, to whom, and when new medical facts are to be presented. Without the educator to help, medical advances would fall short of their purpose, for are not all discoveries to be assimilated and ultimately to make one's life fuller, happier and healthier? New and technical facts in areas of safety, healthful living, and good medical care must be interpreted to the pupil in a practical way in order to make these facts applicable and fruitful. This leads us easily into consideration of the big changes in school health philosophy and the modern school's responsibility in pupil health.

The school health worker must recognize one rather insidious change. He now has a whole new set of health problems to deal with. Some defects and disabilities have virtually disappeared, but the job remains as big, for other defects and disabilities have taken the former's place. There has been merely a shift. The child with the infected ear, nose or throat, or with the tell-tale cotton sticking from his ear is now somewhat rare. The upper and lower respiratory infections are being replaced by the hypersensitive and allergic diseases. The crippled backs and withered limbs of polio and the damaged bones of osteomyelitis are now being replaced by the psychological and psychiatric handicaps. The school absences resulting from the communicable diseases are now the absences of emotional outbursts and breakdown. Home teacher assignments are less for chronic infections and more for the genetic problems of blood dyscrasias, epilepsy, and diabetes. More children are showing up overweight and less underweight. The classes for the blind when due to retrolental fibroplasia will soon be a thing of the past while special classes for the mentally retarded will increase. And so it goes.

What makes it so difficult for the school health worker is that his traditional approachs must change. Valued tools and hallowed philosophies are no longer valued or hallowed. Yesterday's techniques must remain with yesterday. The school health worker's discernment and improvising agility is being constantly strained as he seeks new tools and new techniques for these new problems. To emphasize the shifting patterns of school health, for a moment consider one area: For years a considerable amount of time and effort went into the tuberculosis program. Case finding with its elaborate system of education, skin testing, and X-raying consumed a great deal of the school personnel's time. Now with continued effort, tuberculosis may be eradicted in another five to ten years. County Tuberculosis and Health Associations are already adjusting their sights, taking on, as their next area of interest, the chronic respiratory diseases including emphysema, bronchiectasis, chronic bronchitis and asthma. To be brought up-to-date school health departments must again shift their point of view. What will this change mean? To teach the facts of preventing the chronic respiratory diseases, the curriculum must of necessity include the following:

1. Air hygiene including air pollution, filtration, ventilation, humidification and heating.
2. The smoking habit and its relationship to respiratory health.
3. Public education in controlling the spread of acute respiratory infections.
4. Neglected allergies and their relationship to respiratory health.
5. Adverse effects of fog, winds, cold, and dampness to health.
6. Emotional and psychogenic elements of disease.
7. The importance of preventative inoculations and vaccinations.
8. The importance of good nutrition and good personal hygiene to health.

Now it becomes obvious that de-emphasizing tuberculosis and emphasizing the chronic respiratory diseases becomes almost a modest health education revolution. Multiply these problems by all the other school health programs and one gets a glimpse of the magnitude of the school's job as it pertains to medical and scientific advances.

Let us turn to another aspect of the school health movement. Modern school medicine no longer focuses its resources on detecting physical defects. No longer can a physician discharge his school obligations by visiting classes and identifying pupils with chronic infections of the ear, nose and throat, heart murmurs, and growth problems. School medicine has borrowed knowledge and techniques from many sources. It has asked and generously been given knowledge from the psychologist and psychiatrist, the orthopedist, the pediatrician, the public health and the industrial physician, and the general practitioner. This has made the fabric, the warp and the woof, if you please, of a new specialty — school health medicine. To become skilled in this specialty, a worker must have knowledge of the factors of en-

vironmental control. He must have insight into the early emotional stresses and strains which breed the neurosis and psychosis. He must understand the problems of the handicapped, and possess the judgment to select candidates for the Braille and lip-reading classes. His knowledge of sports medicine should be extensive, and he must be able to select and give guidance to an adaptive physical education program for the physically handicapped.

How come such a hodge-podge of knowledge can be synthesized into anything coherent and useful? The keystone holding all together is summarized in the word *prevention*. Osler's often quoted statement that "preventative medicine is the medicine of the future" is nowhere as true as with school medicine. The new look, then, is prevention of defects; the old look, the identification of defects. This is an extraordinary challenge. Every school health worker who accepts public funds for his services owes the modern school system the latest in preventative information and techniques. This is no small task. There are many unanswered problems. Nowhere can medical research be so quickly used. As a specific example, consider the many problems in the field of mental hygiene. Psychiatry is just beginning to realize that schizophrenia may be exhibited in childhood where heretofore aberrant behavior was labeled emotional instability. So we know this problem is not so simple. The field is wide open to research. We can justifiably state that we do not know how to find the psychotic child, and we do not know what to do when one is so identified. Further, should psychotic children stay in school? Is it good for them? What of the psychotic ferment on others? What is the school's responsibility?; the community's?; the state's?; and the parent's? It is staggering to think of the many medical and social problems to be solved in this area alone.

Although school medicine is accepting prevention and education as their forte, the goals of such a program cannot be obtained by them alone. Success of such a program depends on others, all of whom comprise a team whose objective is to enable the school child to grow into an adult capable of giving his full share to the community. By far the most important members of the team, both quantitatively and qualitatively, are the professional health workers of the community of which you and your organizations are representative. These workers are the physicians, dentists, nurses, dental hygienists, psychologists, medical and dental specialists, nutritionists, and physical therapists. The public health department adds strength to the team. It is common knowledge that in many areas school health personnel resent the entrance of public health personnel on the school scene, and in all fairness, we must add that the contrary is also true. In Santa Monica we find it delightfully satiating to pick the brains of the public health department's sanitary engineers, public health educator, epidemiologist, medical technologist, public health administrator, statistician, and sanitarian. So for their remedial and therapeutic needs schools now look to the community for medical facilities, hospitals and personnel. Even though attempting to teach a physically handicapped child, the schools depend upon the community for the removal of the handicap. Schools are not hospitals; teachers are not nurses; administrators are not doctors. They want to say, "You have given us a child to educate. Unfortunately he is handicapped; his learning will be delayed and complicated. We ask that you remove or at least ameliorate the defect so that his learning may not be impeded." This, I say, is the modern school health philosophy.

Looking into the future we see even greater community responsibility for the school child. With the impetus of the modern school health program, more and more children will be privately examined by the community physician, examinations designed to detect educationally handicapping defects. Less frequently will the schools be called upon to identify and diagnose handicaps. The school's responsibility will eventually be that of teaching pupils the value of good medical care, whether that care be from private or clinical sources. It is not too much to hope that school medical resources in the future will stimulate the medical examination of each pupil by the medical personnel of the community rather than by those of the school system. The implementation of such a program only lacks details of direction and communication. School health departments are the rehabilitation movement's closest allies. We rub shoulders in many areas: speech training for the hard of hearing and deaf children, special education procedures, including Braille for the blind and the partially sighted, and adaptive physical education programs for those with major disabilities. Even a modern physical education program exhibits concern for the minor physcal and emotional deviations including postural divergencies and the simple neuroses. These, among many, are our common concerns. Even though we have these common concerns, it is not meant to imply we have common objectives in therapy. The majority of rehabilitative facilities concentrate on problems of physical or vocational restoration. The public schools

have a somewhat different objective. We are only secondarily concerned with physical and vocational restoration in a therapeutic sense, while primarily helping our pupils build a physical education program around his disability, helping him learn to compensate, to live up to his full physical and mental potential, and instituting preventative measures to protect from atrophy and disuse in other parts of the body. In this sense we are not a treatment program. We can never, in facilities and support, double for the community rehabilitation centers.

Now, in the implementation of our program we leave common ground in the area of public support. From informed sources we can assume that community rehabilitation services are beyond the means of the average family. Rehabilitation will come unto its own only when financial support from private sources and from voluntary pre-paid insurance underwrite both out-patient and in-patient rehabilitative services. Here our respective programs differ. Although the public school's program is dependent on public recognition, it is supported by tax funds. For those of us who believe in free enterprise, we look toward the day when more and more can be done for the disabled in the community rehabilitation centers, with less and less being done in the tax-supported public schools.

It is always appropriate to close with a rather challenging idea, and this one coming from a part-time bureaucrat is indeed novel. Extend your vision a few decades: Is it too much to hope that the adaptive and special education programs may become a community endeavor with the rehabilitation movement in the vanguard? Such a step would be social planning in the best American tradition.

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ALIGNING SCHOOL AND HOSPITAL SERVICES FOR ATTAINING FITNESS

The importance of living must be fully appreciated in order to understand and value the differences in degrees of fitness. It is believed by most scientists that effective principles of action that make possible the development and retention of total fitness is of significance in extending the span of life. Fortunate indeed are those who in their lifetime have the good luck of seeing the fruition of their dreams, aspirations and efforts as a result of their longevity.

Today there is too little planning for the present or future in respect to fitness and far too much plotting by individuals. They seek to find a kit of tools which will supplant the need for an expenditure of energy through work whereby they will gain and maintain physical and emotional stability. They are looking for shortcuts rather than investing their intelligence and strength to gain an objective.

With some citizens it is because they do not know why fitness is necessary nor how to go about attaining this state of well-being. As educational leaders it is our responsibility to furnish the information and spark which will kindle fires that will burn indefinitely and inspire all persons to work for dear life.

Schools, communities and medical facilities must give consideration to the aligning of programs directed toward the habilitative factors involved in the totality of fitness. This means that programs must be developed which are individualized to meet the personalized situation. For the handicapped, atypical, underpar, neuropsychiatric, middle age adult, senior citizen, youth as well as the average individual the criteria must be formulated to fit the respective person and his own capacity, for there is a state of fitness suitable for everyone.

There are varying stages or periods and states or types of fitness for at certain maturational and chronological levels there are degrees of capacity to be expected which are unusual and unique to that age. There are also differences that are specific for the status of the individual because of his particular kind of handicap or condition.

These elements generally consist of physiological, sociological, and psychological needs; specifically they may be classified as nutritional status, postural fitness, organic and neurological facilitation, functional ability, social adjustment, interpersonal relationships, mental attitudes, and character traits. Some of these factors are possible of control but unless they are comprehended and recognized they may detract from the complete fitness potential for they are eclectic in their wholeness.

It is a known fact that stress, exhaustion and inactivity are detrimental to the well-being of the neurological and physiological systems. While leisure and good incomes originally meant a chance to do something with our lives, they have to mean an opportunity to do nothing, and the direction must be changed. Atrophy results from inactivity in all the body elements and characterizes those not willing to work in order to live. It therefore becomes self evident that these biological laws cannot be flouted with impunity.

Dr. Leon Lewis, in speaking before the California Heart Association on May 21, 1960 said, "The

bed is a useful instrument, but like any other powerful agent it can be overused . . . physicians should work to promote both physical activity and mental alertness in convalescent heart or stroke patients." Many medical leaders concur with such thinking and are applying these principles not only in rehabilitation but in daily living prescriptions.

At a recent Colloquium on Exercise and Fitness sponsored by The University of Illinois, College of Physical Education and The Athletic Institute on December 6-8, 1959 at Robert Allerton Park, Monticello, Illinois, many statements were made by the participants which were of great significance to our subject.

Of direct relationship is the statement by Edward L. Bortz, M.D. who said, "Practicing physicians are occupied by innumerable nuisance complaints that, with even mild endeavor to keep physically fit, would enable patients to avoid them. Since our major interest is with older individuals and the measures which keep them in good condition, the exercise factor is one of the most important, and the most neglected, of the practices individuals should utilize in order to enjoy the added years which science is making possible."

"It begins to appear that exercise is the master conditioner for the healthy and the major therapy for the ill. Fitness implies a dynamic homeostasis, the ability to respond to life's physical, emotional and social ongoing demands."

While it is undoubtedly unfair to select only one author's comments to quote from, time does not permit of a more extensive review. I would however, sincerely urge that those of you who would discover for yourselves scientific facts based on experimentation by learned men who have tried their knowledge in practice, obtain the published Collection of Papers Presented at the Colloquium on Exercise and Fitness from the Athletic Institute*. Aspects of exercise and fitness are considered from the medical, physiological, nutritional, psychological, and physical education relationships in the presentations.

The fostering of concurrent media for ascertaining fitness processes that are abreast with scientific knowledge yet practical as to application calls for a team approach and a synthesizing of information by school, community and medical leaders. Such planning may be accomplished through the media of workshops, clinics, colloquii, and committees where those responsible for the application of essential experiences consider all expedient means. Among the major factors where parallel thinking may be productive in the alignment of services the following ideas are suggested for consideration.

1. *Definitive clarification of major concerns* which may be amenable to change, may be jointly conceived through investigation in a conjoined approach. Recognizing the possibilities and potential resources available is the *first step* in solving these problems.
2. *Specifications as to segmental roles of respective agencies* and delegation of responsibilities in keeping with capabilities of those in charge and ethical practice procedures are required. Deciding as to those best qualified to conduct a particular phase of instruction because of the circumstance of climate of situation and background of personnel preparation should be the *second step* needed.
3. *Various recommended contributions suggested by the respective persons from each agency* should be studied as to their specific constructive value and soundness of techniques. Many possibilities may be revealed by means of this *third step* in reflective thinking.
4. *Coordination of cases calling for a follow through of care* is a must where subsequent attention may be indicated by either school, hospital or community facilities or where a particular modality may be most beneficial. Early referral by the physician, teacher or parent to the appropriate organization should be determined and constitutes the *fourth step* in providing personalized attention.
5. *Teachable moments when such resoration programs may best be applied and conducted* should be established as an integral part of the total mission. The collating of all liaison contributors and the part each is to play becomes the *fifth step* toward effective action.
6. *Motivational techniques for capturing the imagination of all individuals which may create a zest for living needs to be defined.* Proper application of these precepts is desirable and a *sixth step* in the over-all planning.
7. *Providing qualified leaders conscious of their opportunities for meeting the basic needs of society,* makes necessary a critical analysis of the various task specifications. This *seventh step* is perhaps the most important factor in the success of such a program.

While such a project will be faced with numerous considerations calling for solution the seven steps which have been mentioned should challenge

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NEW TECHNIQUES OF ATHLETIC TRAINING AND CONDITIONING*

(PART 1)

THOMAS KIRK CURETON, Ph.D.**

Introduction

The techniques of athletic training and conditioning are essentially those procedures related to preparing men or women gradually for strenuous exertion, and to make the best performances in the most efficient manner commensurate with health, and to recuperate rapidly from the exertion. There is no clear distinction between training and conditioning, but usually the term training refers to the scheme of progressive exercising, interval training, or taking workouts, whereas, the term conditioning usually refers to various states of the body: patterns of exercise, therapy, massage, bandaging, or baths.

The application of science to this area of sports knowledge is relatively new but there is a long background of empirical practice, quasi-inventions, and belief in methods that have, seemingly, worked well. The journals of physiology, physical education and athletics, and hygiene include various articles, and there are several "trainer's bibles", which make up current knowledge. Sport-medicine would like to add to this array of knowledge. Several professional fields are involved. Scientific research is needed to validate ideas in this area.

It is an interesting fact that at the time many of the techniques were originally introduced and adopted, they were argued and debated, and science usually followed in a slower more methodological way, to verify or reject the practices on the basis of certain types of experiments. Very seldom are these experiments sufficient or controlled enough to answer the hypothetical questions definitely and finally under all possible conditions, with various types of subjects, and in realistic athletic situation (22,23,24, 25,26).

In addition to a brief review of the techniques which have appeared, this paper aims to summarize briefly five areas or topics, which are currently causing attention. A positive note will perhaps be recognized because it is the purpose to help coaches and trainers to take positive actions which will help the athletes, even if only "trends" of evidence of a positive nature have been discovered. In some of these, "irrefutable" proof still remains to be discovered. The report is based in part upon surveys conducted by myself at five Olympiads (22,23,27,35,37,60,68,71).

Review of Scientific Applications to Sports

A review of the development of new techniques in sports since about 1910 shows many new developments, at least new when they were introduced. These have been advanced by ingenious coaches or athletes, and occasionally from laboratory research; but generally from trial, use or no use alternately, in the actual athletic situation. Much of the research in physical education has been done at the athletic field, pool, or gymnasium, and it is all too obvious that formal laboratories have not been able to imitate athletic performances exactly, even with treadmills, ergometer bicycles, rowing ergometers, and such devices. Nutritional experiments have usually imitated the long drawn-out progressive training of modern endurance work only very partially and inadequately, and there are few careful longitudinal training experiments with points of observation all along the training curve.

Some of the new techniques of training and conditioning are shown in Tables I-VIII but they do not include all possible items from all sports.

Scientific Applications of Cinematography and Mechanics

A modern analysis of any sport requires the use of cinematography, involving measurement of the film and combination of the measurement into various equations of mechanics according to the nature of the problem. Measurement of distance, time and directions, or angles, are readily made; and combinations of these can be used to determine velocity and acceleration, and then force can be computed. Three illustrative examples will be given:

A. **Bob Richards** (pole vault). After photographing Rev. Bob Richards three years before he was Olympic Champion, I told him that he ran as fast as any man with the pole; that he took-off onto the pole as well as any high jumper; but when he swung through to the pole near the vertical that his pull-up was too slow. He began a vigorous strengthening program and increased the strength of his hands from 125 lbs. average to 175 lbs. He prac-

*This article appeared originally (in French) as "Nouvelles techniques d'entrainment et mise en condition athletiques." *La Revue de l'Education Physique*, No. 3, 193-218, 1960.

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ticed the faster pull-up while "balk-vaulting" and by practicing on a rope in a gymnasium. This was supplemented by chinning the bar every day. He practiced the vertical Jump from one foot and from both feet until he could do 26 inches. His chinning improved from 6 to 26 chins. He also did fast knee-bends with a barbell across his neck. Two years of this work and he had added 17 inches to his vaulting height.

B. **Harrison Dillard** (high hurdles). In order to assist other hurdlers we photographed Harrison Dillard, at Baldwin-Wallace College in Ohio. He was the best hurdler in the United States in 1948. We found by cinematography that Dillard got his lead foot on the ground faster than any hurdler we had ever studied. Since he was a very fast sprint runner, this enabled him to run a bit more rather than "float" a bit longer over the hurdles. A six-inch advantage on each of ten hurdles gave him about a five-foot advantage, which was enough to win over other top hurdlers who did not have this advantage. We demonstrated this to Willard Thompson, a University of Illinois hurdler, and after considerable work he began to master the same style, and became the next year the N.C.A.A. Champion in high hurdles. It was determined that both arms should be thrust over the hurdle and the body "jacked" rather fully on the thighs, then when the body was just over the hurdle the body was straightened up rather quickly, causing the lead foot to shoot quickly to the ground. The drive of the foot downward is also aided by raising both arms.

C. **Parry O'Brien** (shot put). The cinematographic analysis of Parry O'Brien's shot put shows a new and different technique. He starts the shot much lower on the parabola in order to get a longer push. In accordance with $Ft=MV$ the longer application of the force theoretically would give a greater relative momentum.

New Techniques	Approximately 1910-1939	Approximately 1940-1960
1. Broad Jump	Double Arm Hang Style Up-Throw and Hitchkick	Weight Training Practice Strengthen Back and Legs
2. High Jump	Scissor Style, Western Roll, Straddle Style	Build-up "light-weight" single jumping shoe; and weighted shoes for practice
3. Shot Put	Cinematographical Analysis of Release Angle (41°)	Longer Starting Push (O'Brien) to Increase FT=MV; Weight Training; Lateral Torque
4. Track Racing Start	Reaction Timer. Drew "Bunch" Start. Starting Blocks. Cinematographical Analysis.	Electrical Starting Blocks; Reaction Training to Sound; High Knees; Use of Arms. Slow Increase of Body Angle and Short Starting Steps; Leg Speed. Optimal warm-up.
5. Running Stride	Sprint—on toes. Middle Distance—rangy stride breathing, relaxation. Distance Running—flat-foot, formaldehyde soaking for toughening skin. Cooling cap for head. Lightweight Shoes; Japanese shoe.	Economical Arm-carry. Optimal breathing and relaxation. Optimal O_2 intake. Interval training. Pace Training. Fartlek Training. Preseason Build-up Training (Elliott, etc.); Breathing (Bannister, etc.).
6. Pole Vault	Centrifugal Force Theory; Fast Pull-up and Timing of Pull; Handstand on Pole; Jumping Type. Measurement of Take-off and Run	Fiber Glass Pole. Aluminum Pole. Better Runways; Longer, Better Preliminary Fitness Program (Bob Richards). Weight Training. Warm-up
7. Javelin Throw	Speed with Cross-over Step. Finnish Quick Re-bound from Full Arm-Extension. Aluminum Spears.	Chest-pull from Full-Stretch Position of Arm. Progressive Build-up for Throwing. Warmup.
8. Discus and Hammer	Angle of Throw. Hold coil until throw.	Speed of Whirl; Lead Hammer Head.
9. Hop Step and Jump	Timing. Speed and Rhythm. Measurement of Take-off.	Use of Arms. (Cinematographical Analysis). Weight Training. Feather step
10. Pentathlon	Skill Training. Army or Navy Training.	Muscular Endurance Training. Steeplechase Training. Obstacle Course (viz. Little Creek, Va.). Circuit Training.
11. Decathlon and Steeplechase	Skill Training.	Ibid., as above. Progressive Schedules and timing.
12. Finish	Throw of Chest at Tape (Paddock)	Over-Lean toward Tape.
13. Event Selection	Optimal Type.	Fitness Aptitudes for Event.

NEW TECHNIQUES OF TRAINING AND CONDITIONING IN TRACK AND FIELD

TABLE I

New Techniques	Approximately 1910-1939	Approximately 1940-1960
1. Starting	Take-off Blocks. Cinematographical Analysis of Position; Arms in Front. Weight on Toes. Optimal Knee Bend. Depth of Entry.	Reaction Timer. Auditory Reaction Training. Kick on Start. Jump Training. Amount of Warm-up.
2. Strokes	Butterfly Breast Stroke. Dolphin Kick. Shortened Arm Stroke (Vector Analysis — Cureton) (Flutter Kick Analysis—Cureton). Value of Up-Kick.	Rhythm and Timing. Flexibility. Cinematographical Analysis (Silvia on Yorzyk). Cinematographical Analysis (Cureton on Miyazaki, Yusa, etc.). Training of Related Muscles by Pulley Weights, Medicine Balls, Exercises (Kiphuth and Cureton).
3. Body Position and Resistance	Optimal Body Position (Cinematographical and Stop Watch Analysis—Cureton) Resistance Curves (Karpovich, Cureton) Low Resistance Suits	Flexibility Training. Gliding Training. Shaving of Hair. Choice of Center Lane. Breathing with Minimum of Disturbance of Position for Least Resistance (Keeping head down, legs in line, etc.)
4. Turns	Spin Turn, Closed. Kick Out of Turns. Kick into Turns.	Somersault (Flip) Turns. Eliminate Breathing After Turn.
5. Selection and Aptitude for Event	Gliding Tests (Cureton) Arm-stroke and Leg-Kick Velocity Tests (Cureton) Drop-off Endurance Test (Cureton) Horizontal and Vertical Floating Tests (Cureton) (35)	Flexibility Tests. Heartometer "Heart Stroke" Test. 0_2-Intake Test (Karpovich and Cureton and Van Huss) 1000-Point Gymnastic (Land) Fitness Test (Cureton)
6. Warm-up Procedures	Workout Before Meet Stretching Exercises Oxygen Breathing Sauna Bath or Steam	Hot Towels on Joints (Ankles and Shoulders) Hot, then Cold Shower
7. Workouts (Progressive Training Routines)	Repeat Starts (20 to 30) Repeat Turns (time both stop watch method) Interval Training: (50, 70, 90%) (4 x 400 up to 10 x 400) (6 x 200 up to 10 x 200) (8 x 100, arms; 8 x 100 legs; 8 x 100 both) 20 to 30 x 50 for pace. Land Conditioning Exercises, 2-3 months.	Control Test for Staleness (Overwork): Hemoglobin Rating. ECG (Amplitude of T-wave). Heartograph (amplitude). Repetitious Heats, 95%. Test Exercises, 1 per week 6-Months Build-up with Running, Gymnastic Exercises, Medicine Balls, Rowing Machines, Pulley Weights.

NEW SWIMMING TECHNIQES

TABLE II

1. Basic Conditioning	Diving Practice in Separate Area from Swimming. Trampoline Work. 1½ Twisting Somersaults. Pond Twisting Belt with Over-head Pulley and Safety Belt. Board Bounding for Height and Control. Preliminary Gymnastic Conditioning.	Specialized Coach for Diving Advanced Trampoline Work, Somersault and Twists. Double Full Twists. Triple Somersaults. Ear Plugs. Fitness Testing for Balance, Flexibility, Agility, Strength ,Power and Endurance.

NEW DIVING TECHNIQUES

TABLE III

Various techniques of sport analyzed by cinematographical method may be understood in terms of the scientific principles involved from the point of view of external mechanics. Such work began in the United States about 1935, (1,2,3,4,5,6).

While A. V. Hill did much to establish the scientific nature of track running, as did Wallace Fenn, the application to many other events than running has now been made. Our series of track papers relating the principles of mechanics to the various events began with "The Mechanics of the Track Start" in 1935 (2). This was followed by papers on "The Mechanics of Track Running" (6), "Mechanics of the Shot Put" (5), "Mechanics of the High Jump" (3), "Mechanics of the Broad Jump" (4), and finally this series was summarized in terms of the methodological principles of applying mechanics to the motion picture film in the article entitled, "Cinematography as a Method of Research in Athletics and Physical Performance" (1).

The early studies mentioned above were followed by those of one of my graduate students, Dr. A. V. Ganslen, who was himself a notable track star, especially in the pole vault. His graduate thesis, "Mechanics of the Pole Vault" (7) analyzed the fifteen best pole vaulters in the world at that time. This work was later enlarged and published as a small book. Ganslen then added other papers on "Mechanics of the Javelin Throw" (8), "Mechanics of High Hurdling" (9) and the "Hop, Step and Jump" (10).

Many applications of cinematography were also made to swimming and diving from 1930 to 1950 in the United States. The first article was "Mechanics and Kinesiology of the Crawl Flutter Kick (1930) (13); then followed in rapid succession, "The Stop Watch Method for Analyzing Swimming Speed" (sometimes using cinematography to check the results) (14), "Mechanics of the Crawl Arm Stroke" (15), and "Coordination Tests of Swimming" (16).

Again several of my graduate students added considerable to the work. Fred Lanoue published "Mechanics of Diving" in 1940 (17). James Counsilman made a study of "Mechanics of the Butterfly Breast Stroke" (18), using three top swimmers as models; and Charles Silvia made a study of the "Mechanics of the Dolphin Butterfly Stroke" using Bill Yorzyk as his model (19). Yorzyk was Olympic Champion in 1956 at Melbourne.

Scientific Testing of the Fitness of Athletes

A system has been worked out for the scientific testing of athletes. The purpose of this type of testing is to determine the characteristics which are causally related to performance, and to determine

New Techniques	Approximately 1910-1939	Approximately 1940-1960
Volleyball	"Spike"	Fitness Test: Reaction Timer—Agility Test—Vertical Jump—Endurance Test.
Basketball	Man to Man Defense Zone Defense; Fast Break; One-Hand Foul Shot; One-Hand Feed-in Shot. Extra Baskets for Practice Running in Pre-Season for Endurance	Aptitude Test: Push-Pass for Speed; Vertical Jump; Dribble and Shoot; Long Loop Shot; Foul Shooting; Agility Run; Reaction Time.
Football	Special Kicking Shoe. Obstacle Course; Resistance Charger; Tackling Dummy; Zone Defense; Nose Guards; Target Kicking Areas.	Lightweight Pads; Face and Teeth Protectors; Adaptable Cleats; Stronger Helmets; Reaction Testing; Spring Training; Heading Practice Rigs.

NEW TECHNIQUES IN COMPETITIVE GAMES

TABLE IV

Boxing and Wrestling	Preliminary Weight Training and Running; Light Bag Work; Heavy "Sandbag" Work; Medicine Ball Work; Road Running; Taping of Hands and Wrists; Teeth Protectors; Sparring Partners.	Obstacle Course; Steeplechase Course; Fartlek or "Pick-ups"; Reaction Time Test: for Speed of Body and Speed of Hand; Muscular Endurance Tests. (Protective Headgear; Cardiovascular Tests; Isolated "Country" Training.

NEW TECHNIQUES IN COMBATIVE SPORTS

TABLE V

the physical fitness levels of different sportsmen. The primary purpose is *not* to diagnose pathological states, but such data are available to physicians if they wish to use it in any way.

The monograph *Physical Fitness,* published by the American Association for Health, Physical Education and Recreation, Washington, D. C., (Supplement to the *Research Quarterly,* May, 1941), was the beginning of this work. The next publication was *Endurance of Young Men* (20) (1945), published by the National Academy of Sciences, D. C. In the latter, standardized exercises are combined as tests to measure muscular endurance. Four main types of muscular endurance are demonstrated.

As an example, the muscular endurance tests were used with Roger Bannister, who was tested in the Royal Free Medical College, in London, in June of 1952. His back and leg muscles were found to be weak. From a table in our monograph he was shown the muscular endurance exercises which correlated with the mile run above 0.40. These he promised to practice after the Helsinki Olympics: (a) Floor Push-ups (0.702), (b) Sit-ups (0.551), (c) Repetitious 300-600 Yard Runs (0.715); (d) Repetitious 100 yard Runs (0.575), (e) Repetitious 1000-Yard Runs (0.758), (f) Chin-ups (0.491), (g) Squat-Jump (0.436), and (h) Continuous Hops (0.404). It is possible that some of these exercises helped to strengthen his back, and this may have been a factor in his magnificient run of 3:58.8 the next year.

New Techniques	Approximately 1910-1939	Approximately 1940-1960
ALL SPORTS	Medical Service Department; Rest Rooms; Training Room with Physical Therapy Equipment (Heat, light, electricity, etc.)	First Aid Cabinets at Practice Training Center; Fitness Testing Laboratory.
	Indoor Training Bicycles.	Motor Driven Treadmill.
	Indoor Track for Winter Use.	Bicycle Ergometer (i.e. Hellebrandt Type).
		Outdoor Board Track for Winter Use (in cold climates).
	Rowing Machines.	Rowing Ergometer .
	Pulley Weights.	Electrocardiograph.
	Medicine Balls.	Ballistocardiograph.
	Sandbags.	Hearing Testing Equipment.
	Dumbbells.	Sight Testing Equipment.
	Barbells.	Reaction Timers.
	Massage Tables.	Graphically Recording Ergometers,
	Dynamometers.	Respirometers, Oxygen-Use Record-
	Tensiometers.	ers. Gas Analysis Equipment. Per-
	Equipment Repair Shop.	sonality Appraisal Forms, Tables,
	Improved Pits and Runway.	Room.

TABLE VI

NEW TRAINING AND CONDITIONING EQUIPMENT AND AIDS FOR RESEARCH AND TESTING

1. Larger Proportionate Carbohydrate, Especially Before a Long Endurance Race.	Corn, Maize Baked Potatoes Canned Fruit Prunes, Honey	Wheat Cereal, Oatmeal Dried Fruits Ripe Bananas Apricots
2. Protein	Toast, Skimmed Milk, Iran Meat Liver, Eggs, Cheese	**Wheat Germ** Peas (green and black eyed) Lima Beans
3. Red, Green and Yellow Vegetables	Lettuce, Tomatoes, Parsley, Greens, Carrots Spinach, Beets, Kale	Raw cabbage, Green Beans Celery, Carotene, Beet Juice
4. Fats	Nuts (Brazil) Soy Beans	**Wheat Germ Oil** Soy Bean Oil
5. Citrous Fruits	Oranges Grapefruit Tangerines	Concentrated Orange Juice Concentrated Grapefruit Juice Concentrated Tangerine Juice
6. Vitamin Supplements	A, B_1, C, D Yeast	B-Complex Crystals of Wheat Germ Oil

TABLE VII

NEW DIETARY AIDS

It is probably more important that we did predict that all of the men we had ever tested, Bannister seemed to have the best possibilities to run under 4:00 Min. I said, "Right here in London was the man who had the cardiovascular potential to run under 4:00 Min. for the mile, for the first time in history." In a lecture in the College of Tropical Medicine and Hygiene, University of London, on June 5, 1952, I made this prediction and it was published the next day in the London *Daily Mirror* in a small black box on the front page. Since Bannister was actually the first man to accomplish the feat, the same paper again published a similar box saying "At least one person is not surprised at Bannister's performance because Professor Cureton, from the United States, predicted over a year ago that Bannister had the potential to run under 4-Min. for the mile." The full basis of this prediction is reported in the *Journal of the American Association* (20). When Bannister actually ran 3:58.8 at Oxford on May 6, 1954, the London physiologists and sport doctors were greatly surprised that it had occurred and that it had been rightfully predicted.

This type of testing has been regularly done at some institutions to discover athletic potential, and also as a basis for advisement of fitness status, overtraining, or nutritional level related to performance. In general such tests aim to (a) Determine Mental Fortitude, (b) Structural Aptitude for the Event, (c) Organic Capacity for the Event, and (d) if cinematography can be done, the stroke, stride, or technical mechanics of the performance. The latter is usually called "form". Two of our books contain some of our experiences with this work, namely, *Physical Fitness Appraisal and Guidance and Physical Fitness of Champion Athletes* (27). A summary of our methods has been published in *Sport Medicine*, Helsinki, Finland, 1953.

From 1950 to 1959 we worked with a boy who became in the end a great tumbler. This boy began undersized and a bit underdeveloped, and was considered a "fringer" in his neighborhood. He was

New Techniques	Approximately 1910-1939	Approximately 1940-1960
1. Somatotype	Sheldon's Somatotype or Somatoscope. Eysenick's (Ht./6 x Chest Width) Crural Ratio of Lengths (Thigh/Foreleg) Trunk Length/Height.	Cureton's Strength vs Ht./Cube Root of Weight and Adipose Tissue. Upper Arm/Forearm. Shoulder Width/Hip Width. Heel Length / Foot Length.
2. Specific Gravity	Total Body Fat. Prediction of Weight.	Body Water, Lean Body Mass. Cureton's Stop Watch Test of Overall Buoyancy.
3. Vital Capacity	McCloy's Equations for Children. Vital Capacity Residual.	Cureton's Equations for Young Men.
4. Flack Test of Expiratory Force	Time of Breath Holding vs 40 mm. Hg. (Male Young Men). Ibid. 20 mm. with Children and Older Adults	Breath Holding After Step Test, 30/Min., 17-inches. Maximal Expiratory Force.
5. Ventilatory Capacity	Maximal, at Rest.	Maximal, During All-Out Work in Running, Cycling or Swimming.
6. Strength Tests	Rogers Test. MacCurdy's Test.	Cureton's 4 Dynamometer Items Clarke's Cable Tension Test.
7. Flexibility Tests	Cureton's Flexibility Test: Ankles, Trunk Flexion, Trunk Extension, Shoulders.	Goniometer Test.
8. Cardiovascular Tests	Schneider Index, Barach Index, McCurdy-Larson Organic Index, ECG (R, T, ST and P-QR)	Progressive Pulse Ratio Test. Cureton-Sterling CV Components. ECG, Heartograph.
9. Motor Test of Athletic Ability (and prediction thereof)	Brace Motor Ability Test (for children) McCloy-Iowa Revised Brace Test (for children)	Cureton's Muscular Endurance Tests (4-Item, 3-Item, etc.). Cureton's 18-Item Test. Cureton-Garret Total Body Reaction Time Test. Cureton's Figure-8 Agility Run. Cozen's All-Around Athletic Aptitude Test. Larson's Power-Capacity Prediction Test.

TABLE VIII

NEW TESTS AND DIAGNOSTIC PROCEDURES FOR ATHLETIC FITNESS

certainly small, retiring and very sensitive for his age. He joined our sports fitness school for boys. In the course of our testing we found that he handled his body unusually well, learned fast, and then we predicted that he had aptitude for tumbling and gymnastics. He was too small to compete well in competitive games and showed little aptitude for swimming. But last September we watched Harold Holmes win the tumbling championship at the Pan-American Games, when he was described as "the greatest amateur tumbler ever produced."

We think there is a strong motivating factor towards fitness in "taking the tests." Not only is understanding of the essential elements in fitness improved but such testing invariably leads to the main question, "How Can I Improve my Fitness?" Two young girls illustrate this point very well. These girls are Sara Barber and Lynn Burke. They are now, after being tested and put on the right track to gain fitness, the best swimmers in Canada and the United States, respectively, in their event, having come from no ranking at all when they were first tested.

In our published works I have discussed the fitnesses of many great athletes, and we have made straightforward recommendations to improve their fitness, both generally for health and specifically for their event. The main factorial components dominating athletic performance are: (a) Constitutional Body Build, (b) Lack of Fat, (c) Strength, (d) Speed of Reaction (moving whole body), (e) Muscular Endurance (f) Cardiovascular Condition (Aerobic Capacity). We use tests for all of these components of physical fitness.

A few words of interpretation and explanation may be in order because the usual "medical inspection" does not measure these components with objective tests. Submaximal tests are generally not applicable for testing what an athlete is capable of doing on an all-out exertion, as in a race. In general we know that gradually progressive physical training produces (a) a lower pulse rate at the end of a standardized exercise (such as a 5-Min. Step Test at 30 Steps per Minute), (b) a greater stroke volume of the heart, (c) greater relative density of the body by specific gravity test, (d) greater relative amounts of Hb, glycogen in the liver, and a larger relative number of red blood cells, (e) greater relative circulation related to increased vascularization, (f) greater endurance by muscular endurance tests, (g) greater strength per pound of body weight, (h) greater speed and power capacity, (i) greater respiratory reserves and ability to stand distress, or oxygen deprivation, (j) improved neuromuscular capacity.

To illustrate that several very different components are involved, I wish to comment on Astrand's work (28). He reported the Maximal Oxygen Intake values for several top track athletes, who ran at a pace of 20 km./hr. up a 1° grade on a treadmill, and obtained 5.29 L./M. for H. Eriksson (Sweden), 5.04 L./Min. for Landy (Australia) and 5.04 L./Min. for S. Eriksson (Sweden), who have run 3:44.3, 3:41.8 and 3:45.2 for the 1500 m. run, respectively. Even larger values were shown for cross-country skiers. His conclusion is that endurance in running and skiing is dominated by the oxygen transport system (circulation). We support this, but in sports like baseball, football and tennis it is *skill*, i.e., neuro-muscular coordination that must be measured; in weight lifting it is strength; in gymnastics it is skill (coordination) and also sufficient balance, agility, and flexibility. We demonstrated that Bannister had relatively high gross Oxygen Intake Capacity but he was poor in aptitude for swimming, gymnastics, and weight lifting. We have been trying to discover the tests which go best with each sport. In order to have a broad battery of tests which may be correlated with performance in one sport or another, we use about 128 tests in our laboratory; and in an improvised field laboratory (as we have in Rome) about 50 test items.

When we cannot measure Oxygen Intake we fall back upon the actual muscular performances, times in races, post-exercise blood pressure, post-exercise recovery pulse rates (Harvard Step Test), and indirect measures. Our studies reported in *Medicina Sportiva,* July, 1958 (30) and October, 1959 (31) show that better endurance goes well with relatively higher Brachial Pulse Waves (sphygmograms), higher T-waves in the precordial leads of the ECG, clean strong pattern of the BCG, and Breath Holding After Exertion. Jokl (32,33) has shown improved force and regularity in the BCG patterns of good athletes compared to untrained subjects.

We believe it is important to observe the athletes in action, to photograph them in action, and also to make careful measurements and still photographs of them. We measure the body ratios from the pictures (35).

The longitudinal studies for evaluating the changes which are associated with different patterns of physical training depend upon these tests. To

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EFFECTS OF SLOW AND FAST STRETCHING ON THE SACRO-FEMORAL ANGLE

GENE A. LOGAN, Ph.D.*
GLEN H. EGSTROM, M.S.**

This study was conducted in an effort to determine the relative effectiveness of two methods of stretching on the angle formed by the posterior surface of the sacrum and the shaft of the femur as measured from the lateral side.

One of the authors (1), in his earlier experience as an athletic trainer while working in conjunction with Robert E. Shelton of the University of Illinois, observed several hurdlers with chronic "pulled" muscles. It was felt by Shelton that many of these injuries resulted from overstretching of the hamstring muscles during warm-up periods in which uncontrolled momentum or bobbing techniques were used. In the ensuing season, these hurdlers were instructed to use only a type of stretching which was under control at all times. As a result, the incidence of "pulled" muscle injuries decreased markedly.

Cureton (2) in an early reference, pointed out that deliberate conditioning through flexibility exercises did not seem to prevent injuries in combat type activities or those activities in which the body must meet severe stress during collisions, sudden twists and maximum speed and endurance efforts.

Scope Weekly (3), a medical news organ, recently reported the following comments by Frank Wiechic, trainer, and Dr. George Laquer, team physician for the Philadelphia Phillies, professional baseball team:

1. A regimen of muscle stretching appears to cut down the incidence of sore arms and muscle injuries.
2. Daily passive and resistive exercises, even if done for a couple of moments, are sufficient to prevent some future injury.
3. Injured players are sometimes stretched three to four times daily to help restore mobility.

The April 6, 1960 issue of this same paper (4) carried an account of four major league baseball clubs which use a variety of bending and stretching routines as pre-season conditioning. Since the inauguration of these routines virtually no incidence of sore shoulders and "pulled" muscles have been reported.

The empirical nature of these conflicting observations would seem to indicate a need for further study.

Landreth (5) in a rather limited study of the relative effects of controlled stretching or forceful stretching (with momentum), found a loss in range of motion in both groups over a two week period. There were no significant differences within groups.

FIG. 1

Weber and Kraus (6) reported that the use of a "spring" or "bobbing" stretch was more effective than a plain stretch whether active or passive. They noted, however, that there is a justifiable difference of opinion as to the value of the two methods. They indicate that "spring" stretch may be dangerous in conditions with pain or muscle spasm as there is a greater possibility of provoking increased pain with subsequent limitation of motion and increased muscle spasm. Their "spring" stretch did not appear to use uncontrolled momentum. It was described as a "slight springing" at the end of the range of motion. They found a 200% greater improvement in hamstring stretching with the "spring" group. The "spring"

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stretch showed a 3 degree increase in hamstring flexibility while the plain stretch showed only a 1 degree increase. The statistical significance of the increase was not reported.

O'Connell (7) reported that controlled stretching techniques did not result in significant increases in flexibility.

The Problem

The problem in this study concerns the relative effectiveness of slow and fast stretching techniques on the sacro-femoral angle. The sacro-femoral angle is formed by a line parallel to the posterior surface of the sacrum and a line drawn through the greater trochanter and lateral epicondyle of the femur. This study is limited to a measure of the sacro-femoral angle in order to measure more objectively changes in range of movement at the hip joint. This technique limits the number of variables which are present when attempting to measure trunk-thigh relationships and also limits the observations to the relationship of the pelvis to the femur, that is, the hip joint. Practically no movement exists at the sacro-iliac joint, thus the measurement is a pelvic-femoral measurement which is a more reliable indication of hip flexibility in an anterior-posterior plane than a measure of trunk-thigh relationships. Inferences may be drawn in terms of hamstring stretching as a result of this type of measurement, however, since the measure is one of bony relationships.

Procedure

The subjects, 12 women and 13 men, were students at the University of California at Los Angeles. The women were participating in service program physical education classes while the men were drawn from a physical education major class. Each of these groups was randomly divided into two sub-groups; a slow stretch sub-group and a fast stretch sub-group. A comparison of the raw scores of the sub-groups in each division revealed no significant difference in the initial scores for either the men or the women.

Each of the subjects was initially tested in the following manner (Fig. 1):

The subject stood with the left side to the camera with the feet parallel within a pre-designated set of footprints drawn on the floor. Markings were made with a skin pencil on the males and chalk on the leotards of the females. These markings were located at approximately the center of the greater trochanter and the lateral epicondyle of the femur. The posterior superior spines of the ilia were also marked. A sacral indicator consisting of a three-legged base plate and a long rod was placed so that two of the legs rested on the posterior superior spines of the ilia and one leg rested in the hiatus leading into the sacral canal (between the cornus). This indicator was held firmly in place and the subject folded his arms and bent over as far as he could. A photograph was taken with a Polaroid Land camera as the subject held the flexed position. Lines corresponding to the sacral indication and that formed by the marks on the femur were then drawn on the photograph and the angle was measured with a protractor. This angle became the initial raw score.

The subjects were then instructed to exercise with 20 repetitions daily using their assigned technique. Both groups followed the exercise pattern used in the initial test. The slow stretch sub-group used the active contraction of the anterior muscle groups to bend at the hips with the legs straight. They were encouraged to stretch hard and hold the position momentarily. The fast stretch sub-group used the momentum developed by a forceful bobbing movement in which the weight of the trunk was "bounced" against the resistance encountered at the end of the range of motion. The subjects were measured again at the conclusion of the ten day exercise program.

Results

It was found that both the slow and fast stretch sub-group had significantly increased the range of motion at the sacral-femoral angle. The women had increases significant at the 1% level of confidence for the fast stretch sub-group and at the 5% level for the slow stretch sub-group. The men had increases significant at the 1% level for both sub-groups. There was no significant difference between the mean differences of the final measures of the fast and slow stretch for either the men or the women.

Discussion

Although increases in range of motion were demonstrated using both techniques the authors hesitate to attribute all of the change to the exercise techniques. The complex nature of flexibility as a phenomenon is still clouded by a lack of understanding of the processes involved. Various psychological, as well as physiological, barriers must be resolved. The authors' interest has centered primarily on the implications of fast and slow stretch techniques as they relate to the occurrence of injury. The fundamental belief that increased flexibility reduces the incidence of injury to muscle tissue has led to an examination of the relative merits of two of the methods for obtaining this flexibility. It has been

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"From Other Journals"

Unless noted otherwise, all abstracts have been prepared by Philip J. Rasch, Ph.D.

Arthur J. Helfet, Mechanism of Derangements of the Medial Semilunar Cartilage and Their Management. *Journal of Bone and Joint Surgery,* 41B:319-336, May, 1959.

The key to the function of the knee joint and its derangements is the rotation of the tibia on the femur during flexion and extension movements. When the knee is extended, the tibial tubercle is in line with the lateral half of the patella; when it is fully flexed, it is in line with the medial half. During extension the quadriceps rotates the knee outward; during flexion the hamstrings rotate it inward. The cruciate ligaments act as guide ropes to keep the tibia on its path during these movements. Probably the semilunar cartilages assist. If rotation of the tibia is forcibly prevented during weight bearing movements, cartilage tears may result. Flexion may be achieved by pulling the medial cartilage away from its anterior attachments or by splitting the cartilage longitudinally.

Anonymous, Restriction of Food or Water and Work Output. *Nutrition Reviews,* 19:23-25, January, 1961.

Tuttle and others have shown that a short period without food reduces physical efficiency. The effect of water restriction is much greater. To evaluate the relative effect of water and CHO supplementation on work, six highly trained dogs were run to exhaustion 17 hours after the last meal. They expended 1191 calories. They were then put through the same test except that they received a CHO pellet equal to 0.5 per cent of the animal's weight 30 minutes prior to the start of the run. They expended 1299 calories. In the third part of the experiment the dogs were permitted to drink water while running. They expended 2141 calories. It is suggested that the water supplementation maintains a relatively normal state of hydration and has a beneficial effect on CHO metabolism.

John H. Arnett and Kenneth D. Gardner, Jr., Urinary Abnormalities from Over-use of Muscles. *American Journal of the Medical Sciences,* 241:55-58, January, 1961.

The chemical and physiological processes involved in the aches, stiffness and discomfort which may follow muscular exertion are unknown. Overuse of powerful muscles may also result in proteinuria, cylindruria, hemoglobinuria, myoglobinuria and hematuria. The cause of this, too, is a mystery. Study of a case resulting when an individual performed 150 to 200 deep knee bends as part of a fraternity hazing suggested that the hemoglobinuria was the result of red cell hemolysis within the urinary tract and that no permanent kidney damage had resulted. Complete recovery ensued in 5 days. Study of such cases may throw light on the problem of acute glomerulonephritis.

Robert D. McDonald, Ken Yagi, and Eugene Stockton, Human Eosinophil Response to Acute Physical Exertion. *Psychosomatic Medicine,* XXIII:63-66, January-February, 1961.

Diminution of circulating eosinophils 3-4 hours after physical exertion has been reported by various investigators, but relatively little attention has been paid to eosinophil counts immediately after vigorous exercise. Seven mature males practiced standard calisthenics until exhausted. Blood samples taken immediately before and after exercise were compared. Immediate eosinophilia was followed by delayed eosinopenia. In previous research with emotional stress an immediate eosinopenia resulted. Apparently different mechanisms are involved in physical and emotional stress.

Ernst Jokl, Cardiovascular Responses to Exercise Concerned in Rehabilitation of Cardiac Patients. *American Journal of Cardiology,* 7:320-329, March, 1961.

The homeostatic resting state of athletes differs from that of non-athletes. During exercise the autonomic nervous changes are controlled by the CNS. Even in highly trained men neuromuscular fatigue intervenes before the physiologic limits of the capacity of the heart are reached. Under pathologic conditions, however, the myocardium manifests metabolic and mechanical imbalances which may become irreversible. A revolution is occuring in the explanation of cardiac control in exercise, making it necessary to modify Starling's Law. Generally the heart of the trained man is larger than that of the untrained and retains a considerable amount of blood at the end of systole, whereas the latter empties itself completely. Such distinctions are merely statistical, and many exceptions are found. Stroke volume responses to exercise are evidently controlled by highly complex mechanisms and may be modified by other influences. These adjustment mechanisms to exercise have long term implications in respect to cardiovascular morbidity and mortality patterns. Physical fitness in health and disease depends more upon nervous control than has been realized. Physiological adjustments to a training program do not precede but follow the improved neuromotor performance capacity which is the chief indicator of the efficacy of the training process. Cardiac control depends upon a flexible combination of functional units in varying arrangements at different times under separate circumstances.

C. L. Prosser, The 'Origin' After a Century: Prospects for the Future. *American Scientist,* 47:536-550, December, 1959.

The *Origin of Species* had more influence on Western culture than any other book of modern times. Evolution is the greatest single unifying principle in all biology. Evolution is now accepted as fact, but there is much about it which we cannot explain. Darwin had no conception of the vast amount of time during which evolution occurred and since his day great progress has been made in the study of the origin of life. Given the conditions existing in the universe, evolution is now seen to be mathematically inevitable. Genetics, a science unknown to Darwin, has done the most to explain natural selection. Research is in the early stages in two areas: (1) The process of speciation; (2) The relationship of environment to biological change. The origin of adaptation is the primary problem of evolutionary biology; the answer may be in the field of molecular biology.

Romano, Robert L., Ernest M. Burgess, and James W. Tupper, Hazards of Water-Skiing. *Northwest Medicine,* 59:65-68, January, 1960.

Snow-skiing is actually safer than water skiing. During the latter injuries may occur from collisions with solid objects, a fall into the water, entanglement with the tow rope, or being struck by a boat. Fractures, dislocations, torn muscles, soft tissue damage, ear, nose and throat injuries, and neurological trauma may occur. Cases of drowning, electrocution, and coronary thrombosis have also been reported. Preventative measures include proper instruction, wearing of a bathing cap or ear plugs, presence of an observer in the boat, and wearing of a life belt.

Richard P. Youniss, Tattoos and Personal Adjustment. *Naval Research Review,* April, 1961, pp. 1-3.

Naval Personnel were administered the Personal Inventory Barometer. Those with more than one tattoo obtained scores indicative of significantly greater personal maladjustment than the scores of subjects with no tattoos or with only one tattoo. The PIB scores of individuals with only one tattoo did not differ significantly from the non-tattooed. It is possible that a single tattooing episode is indicative of a transient psychological conflict. No significant difference in intelligence level was found between tattooed and non-tattooed men. The high frequency of sexual and aggressive symbols in tattoos suggests that they reflect unresolved sexual and aggressive conflicts causing current anxieties.

G. R. Peberby, Moustaches. *Journal of Mental Science*, 107:40-47, January, 1961.

During World War II a study was made of the association between types of moustaches and personality in candidates appearing before two officer-selection boards. All moustaches were grouped under five headings:

Trimmed — Flatly covering most of lip
Divided — Small group of hairs on each side
Clipped — Toothbrush shape
Line — Very narrow strip
Bushy — Handlebars or lesser hybrids.

Men with trimmed moustaches showed no significant differences from the clean shaven. Every man with a clipped moustache failed. They were adjudged to have limited imagination, insufficient appreciation of the views of others, inability to bind together groups of men, to be rigid to the point of diminishing personality, and to show discipline to the point of near ruthlessness. Men with line moustaches passed at half the rate of the clean shaven. They tended to display overconcern with health problems and lessened leader effectiveness. The bushy moustached men passed at a normal rate. There was an indication of increased leader effectiveness among this group; those who failed tended to self-indulgence and self-display.

R. Bronte-Stewart, Cigarette Smoking and Ischaemic Heart Disease. *British Medical Journal* 5223:379-383, February 11, 1961.

Hammond and Horn and Doll and Hill drew attention to the association of cigarette smoking and mortality from ischaemic heart disease, but their statistics have been criticized. Two major possibilities exist: smoking directly interferes with either coronary blood flow or heart action, or both cigarette smoking and ischaemic heart disease are related to a third and common factor. To study these possibilities data collected from 600 apparently healthy men, aged 25 to 55, were examined. No relationship could be found between age, income, nature of occupation, height, weight, degree of obesity, or arterial pressures. In all surveys to date a consistent difference has been reported in that smokers have a higher serum cholesterol level. This indicates the need for further study of the food preferences of smokers and non-smokers.

MacDonald Critchley, Traumatic Progressive Encephalopathy of Boxers. *London Clinic Medical Journal*, 1:27-33, July, 1960.

The pathology of traumatic progressive encephalopathy of boxers is not clear, and its earliest signs are not readily identified. Once started the disability usually increases and no treatment is effective. The clinical picture is fundamentally made up of an organic dementia, superimposed upon which are such symptoms as inefficiency, lack of tidiness and cleanliness, trouble-making, and even delinquency. Depression, or more often a fatuous euphoria, may be present. The patient may be irritable and quarrelsome. Dysarthria may be present. Examination of the nervous system will declose a diversity of abnormal signs. Parkinson's disease or a disseminated sclerosis may be suggested to the superficial observer. Examination of the brains of punch drunk fighters reveals considerable atrophy and widespread gross pathology.

John V. Basmajian and Anthony Travill, Electromyography of the Pronator Muscles in the Forearm. *Anatomical Record*, 139:45-49, January, 1961.

EMG studies have shown that the pronator quadratus is the prime muscle in pronation of the forearm. It is assisted by the pronator teres when speed is needed or resistance is encountered. This is contrary to the statements in many textbooks. The angle of the elbow joint has no effect on the amount of activity of the pronator teres, although several texts state that it displays its greatest activity during mid-flexion or full extension. Flexion of the unloaded forearm does not require participation of the pronator teres.

Vladimir Pishkin, *et al.*, The Effects of Temperature on Nerve Excitability, Attention and Reaction Time in Chronic Schizophrenia. *Journal of Nervous and Mental Disease*, 131:348-353, October, 1960.

Hydrotherapy is routinely used in the treatment of mental illness to stimulate or sedate a patient, but very little information is available on the relationship of water temperature to psychomotor variables. Forty chronic schizophrenic patients were matched for age, length of institutionalization, and drug treatment and randomly divided into two temperature groups: 72° F and 100° F. Temperature conditions were accomplished by immersing the patients in a whirlpool bath. Chronaxy, the Continuous Performance Test, and Reaction Time were measured before and after a 15 minute exposure to temperature changes. Thresholds of nerve excitability were significantly decreased at 72° F and increased at 100° F. Span of attention was inhibited by the higher temperature. Reaction time was slower at the higher temperature.

M. S. Nesarajah, *et al.*, Electroencephalographic Changes in Ceylonese Boxers. *British Medical Journal*, 5229:866-868, March 25, 1961.

EEG records of 50 boxers were compared with those of 75 university students. Sixty percent of the boxers showed spontaneous bursts of disordered activity, as compared with 8 percent of the controls. This difference is highly significant statistically.

HUMAN RESOURCES—Cont'd from P. 77

further investigation as to possible implications. It is a fallacy to presume that nothing can be done about this important problem. We must plan our work and work our plan. Our technical knowledge and medical support as to the desirability of total fitness enables us to attack rather than sit idly by and wait for possible favorable happenings to take place.

Let us look with confidence to the future and through arousing the citizen and those responsible for his welfare create a movement for the benefit of all in various walks of life. I leave with each one of you a rough picture of the needs and possibilities. What you do with changing the situation depends upon your integrity of purpose and interest, for *the aligning of services can aid materially in the attaining of fitness for all.* Thomas A. Edison once said, "Everything comes to him who hustles while he waits," but it might be well to add, do not wait so long to hustle that it is too late.

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VA APPOINTS DR. WALKUP

Dr. Harry E. Walkup, chief of surgical service and assistant director of professional services for research at the Oteen, N.C., Veterans Administration hospital, has been appointed the VA's assistant director of surgical service, at the agency's central office in Washington, D.C.

NEW TECHNIQUES—Cont'd from P. 84

know what changes may be normally expected from strenuous participation in any one sport requires a program of measurement out of training and in training, and even developmentally over several years. We have followed swimming, track and field and gymnastics, but many other sports should be followed (36,37,38,39,40). The full range of improvements take several years (41,42). The studies of Carlisle (43) on swimmers, and of Beckner and Winsor (46,47) on marathon runners, are in this direction.

It is even more important to know what happens to great athletes after they give up training completely, or continue moderate training. This was the purpose of my 1952 study, carried out in London and in Helsinki, Finland, where we measured a collection of former champion athletes. We found in general that most of the distinguishing characteristics, such as: oxygen intake capacity, stroke volume, strength per pound of body weight, power capacity, etc. are greatly deteriorated after 15 to 20 years of sedentary life; but those who had kept up some type of regular training program were significantly different from those who had not done so.

Part 2, the Conclusion of this article, will appear in Vol. 15, No. 4, July-August 1961.

SACRO-FEMORAL—Cont'd from P. 86

reported by subjects in this and other experiments that fast stretching with momentum results in immediate as well as residual pain. This pain could be the result of minute injury to soft tissue involved in the stretching. These symptoms may also indicate that predisposing injury is occurring at the time of the stretching phase of the warmup and as the athlete engages in all-out performance such as the 100 yard dash, the minute injury is aggravated to the point of serious muscle damage. Similar referrals to pain have not been reported by the subjects who have been using the slow stretch techniques.

If a significant increase in the sacro-femoral angle can imply a positive change in the flexibility of the hamstring muscles, then it would follow that since there was no significant difference in the slow and fast stretch methods used, *slow* stretching would appear to be more feasible in the prevention of muscle damage in the preparation for an athletic performance. Before this problem could be adequately resolved however, a longitudinal study over a period of several seasons is needed to determine the relationship of these and/or other techniques to the incidence of muscle injury.

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STUDY SHOWS ISONIAZID'S SUCCESS

How addition of one drug to the doctor's weapons against tuberculosis has changed the future from death to normal life for untold patients is described by a Veterans Administration doctor. Dr. Leroy Hyde of the Long Beach, Calif., VA hospital and the University of California at Los Angeles School of Medicine, said that 13 years ago almost 100 percent of patients with persistent open infectious TB lung cavities died within 5 years. He pointed out that the advent of the drug, isoniazid, the mortality rate has dropped to less than 1 percent among TB patients whose disease is rendered noninfectious by drug therapy.

Dr. Hyde said that of 60 such patients studied at the Long Beach VA hospital, the majority have returned to full-time work. He said the evidence indicates that noninfectious TB patients with open lung cavities now can be treated on prolonged isoniazid therapy and without surgery.

Dr. Hyde's research was supported in part by a grant from the Long Beach Tuberculosis and Health Association.

Chapter Activities

Central States Chapter

The Central States Chapter of APMR held a two-day meeting at Crile Veterans Administration Hospital, Cleveland, Ohio, on April 28 and 29, 1961 sponsored in conjunction with AART and AMRDC. Speakers and topics discussed included Robert C. Boyd, Crile VAH, on "The Function of Management Analyst"; Dr. A. P. Dell Court, Manager, VAH, Broadview Heights, Ohio, on "What the Future Holds for the Hospitalized Psychiatric Patient"; Dr. Roswell Lowry, Chief, PMRS, Crile VAH, on the value of Therapeutic Amateur Radio. In conjunction with this, a tour was made to the local hospital radio station.

On Saturday morning, a very interesting amputee clinic was held. It was conducted by Dr. Roswell Lowry, Chief, PMRS; Dr. Thomas Linke, Chief of Orthopedics; and Ollie Edwards, Corrective Therapist, all of Crile VAH, Cleveland, Ohio.

Highlights of the Chapter business meeting was the taking office of in-coming president Edward Charles of Lexington, Kentucky, VAH. Joseph Rubel, Chief, Corrective Therapy at Crile, was chosen as president-elect; and Harvey Toles of the Dayton, Ohio, VAC, was elected Representative Assemblyman of the Central States Chapter for the next two years.

Mr. Joseph Rubel, Chief, Corrective Therapy, Crile VAH, was the program chairman for this fine two-day meeting.

VERL V. MANGEN

Book Reviews

Multiple Sclerosis—Prognosis and Treatment, by Leo Alexander, Austin W. Berkeley and Alene M. Alexander. (Springfield: Charles C. Thomas, 1961. 188 pp. $7.50.)

Over a period of eight years the authors used the individual case method to study the life history of multiple sclerosis. Data on age of the patients, duration of illness and specific attacks, severity of neurological involvement and disability were collected. By the accumulation of such data the writers hoped to determine what, if any, influences could be observed in the spontaneous characteristics of the disease, or from the treatment which would make a predictable difference in subsequent multiple sclerosis patients. The methods of collecting the material, and the method and validity of measurement used are properly presented before introducing the material pertinent to the individual attack, the course of the disease and the effects of treatment on the course and prognosis of the disease.

From their study of 554 cases the authors conclude that of all forms of treatment evaluated, only blood transfusions and adrenocorticotropic hormone resulted in "demonstrably significant beneficial effect upon the course of the illness." This book should provide very useful information to anyone concerned with diagnosis or care of the multiple sclerosis patient and represents a method of study that could well permeate the entire practice of medicine.

MLB

Kranz Manual of Kinesiology, by Clem W. Thompson. (St. Louis: The C. V. Mosby Company, 1961. 159 pp. $3.75. Paper.)

Kranz's *Kinesiology Manual* has long been a standard laboratory aid. In the first revision it has undergone since his death, Thompson has eliminated most of the minor muscles and has increased the material on mechanical principles and exercises. A number of new illustrations have also been included. The weakness of the book lies in the fact that its nomenclature has not been modernized; for some reason the author has not employed the 1955 *Nomina Anatomica*. As a result his text does not key with the *Anatomy* of Gardner, Gray, and O'Rahilly, the Quiring manuals, the *Functional Anatomy* of Hollinshead, the forthcoming revision of Rasch & Burke's *Kinesiology and Applied Anatomy*, and other books in general use. There will, of course, inevitably be a period of overlapping in the two terminologies, but it is undesirable for any new book to perpetuate obsolescent terminology.

PJR

Boys' Judo, by Harold E. Sharp and Cook C. Hadly, Jr. (Los Angeles: Burton Publishing Co., 1961. 91 pp. Paper. $1.50.)

As the title indicates, this book is written specifically for the young boy, and opportunity is taken to place particular stress on the knightly virtues inherent in training for this sport. The book is profusely illustrated with both photographs and line drawings. Some of the latter show the sequences of the various maneuvers, and some of them are clever as pointed bits of appropriate humor. The text is admirably clear and is free from any taint of "talking down" to its prospective readers. A short section on self-defense specifically avoids mention of any of the deadly moves, and no submission holds are given in the section on techniques. This reviewer has previously had occasion to express his admiration for Sharp's work (this *Journal*, March-April, 1958) and the present item confirms his high opinion. The book is enthusiastically recommended to any one concerned with the teaching of beginning judo, regardless of whether his students are youngsters. Bob Owen and Will Specht, the illustrator and layout artist respectively, deserve special mention for their contributions.

PJR

Textbook of Physiology, Fourteenth Edition, by W. W. Tuttle and Byron A. Schottelius. (St. Louis: The C. V. Mosby Company, 1961. 547 pp. $7.00.)

The last edition of this book to come to this reviewer's attention was the 10th, published in 1949, at which time it was the work of Zoethout and Tuttle. With the passing of the senior author it has become the product of Tuttle and Schottelius. How much the present edition varies from the one immediately preceding, the reviewer does not know. The preface states that the chapters on muscle and nerve have been rewritten, and that a number of more minor changes have been made.

A rather disturbing feature is that the text contains no references. One might wish for citations to substantiate such controversial statements as, "It has been demonstrated that preliminary warming up improves performance in athletic contests." Apparently certain types of warm up do produce improved performance in certain types of events, but that is about all that can be said at this time. The material on the role of the all-or-none law in skeletal muscle might well stand some modification in view of the evidence set forth by Huxley and Hanson in Bourne's *Structure and Function of Muscle*. The term "stress" is used in a way which differs from that of Selye. The flat statement that "smoking increases both the systolic and the diastolic blood pressure" should have been offset by some mention of the findings of Blackburn, Brozek, and Taylor that "blood pressures are distinctly lower in the heavy smokers," (*Circulation*, 22:1112) or similar data. Reaction time is discussed, with no mention of the fact that Pierson, Henry, and others have demonstrated that response time must be divided into reaction time and movement time if it is to be discussed meaningfully. Neither the speeds of reaction given nor the relative order of their rates given here agree with the material in Teichner's "Recent Studies of Simple Reaction Times," and the failure to comment on the effect of aging on response times misses the whole emphasis of Welford's "Psychomotor Performance" in Birren's *Handbook of Aging and the Individual*. It appears doubtful that the definition of tonus would be acceptable to electromyographers, such as Basmajian and Ralston and Libet.

It is unnecessary to belabor this point, but the failure of the authors to cite such pertinent data leaves the reader wondering whether they are familiar with them, and is certainly a handicap to students trying to correlate the authors' statements with material which they have read elsewhere, or are trying to go more deeply into a given subject.

In spite of such objections, the fact that the text is now in its Fourteenth Edition is the best evidence that it has been highly successful in securing the approval of large numbers of teachers. It is profusely illustrated—in a few instances, in color—and contains a glossary and an index. The inside covers give a comparison of metric with English measures. With the reservations set forth above, it fully deserves consideration for use as a lower division text in physiology.

PJR

Buddy System for the Development of Strength in Wrestling, by Briggs Hunt and Gene A. Logan.
Second Series of the Buddy System for the Development of Strength in Wrestling, by Briggs Hunt.
(Los Angeles: University of California, n. d., $1.00 each.)

These are large wall charts, printed on heavy paper, containing illustrations and descriptions of how two men may work together to develop strength. Mr. Hunt has been wrestling coach at the University of California at Los Angeles for several years and was Greco-Roman coach on the 1960 Olympic team, so it may be assumed that these exercises have been thoroughly tested and are eminently practical. They are recommended to the attention of coaches and athletes.

PJR

The Cancer Blackout, by Maurice Natenberg, Second Printing. (Chicago: Regent House, 1959. 206 pp. $3.95.)

This book purports to be a history of cancer disputes which, according to the author, have resulted in "suppression of important facts and the dissemination of distorted information to the public." The book begins with the California State Senate's Interim Committee hearings of 1958 on cancer therapy. After reporting these hearings (at which the author testified) he develops the "pattern of controversy" from the time of Richard Guy, the British surgeon of the Eighteenth Century, and his "unorthodox" cancer treatment, to the modern controversial cancer therapists and such well known names (and their methods) as Koch, Hoxsey, Gregory, Lincoln, Krebs, Evans, Gerson and others. On beginning the book one feels the usual anti-A.M.A. diatribe is developing, but continued reading leads to the conviction that the reporting appears reliably documented. The author asks only that scientific evaluation be the basis for concluding whether a system of cancer therapy is valid or not, without dependence on preconceived ideas of existing methods of surgery and X-ray, as the only methods of treatment. There appears to be either a marked dereliction on behalf of orthodox medical men and cancer therapy evaluation, or a distortion in presentation of the "facts" by the author. If what he reports is true, this book can serve a real purpose in stimulating the public to demand through their legislative representatives that scientific proof (or lack thereof) be demonstrated with or without the support of the political voice said to represent medicine and the scientific world. This volume should be required reading for anyone dealing with cancer, and should prove interesting reading for anyone interested in (and who is not?) the disease.

MLB

Obesity, Its Cause, Classification, and Care, by E. Philip Galvin and Thomas H. McGavack. (New York: Paul B. Hoeber, Inc., 1957. 146 pp. $4.00.)

Here is a small but useful and well written book on what is probably the greatest threat to our nation's health today: obesity. It begins with background information relative to what constitutes obesity, its clinical features, some of the biochemistry of fats and carbohydrates, and a classification of obesity. The etiology is then considered, from the simple fact of overeating to the complex reasons as to why one overeats: psychological, hereditary, or endocrine, and the important aspect of obesity and exercise. Although the latter does not seem to receive the emphasis required in a society constantly seeking ways to "relax," at least regular exercise is recommended.

The final seven chapters deal with management, and, without proposing any miracles, present a well organized, safe, and reasonable approach to obesity control.

This book would seem especially useful to the physician, dietitian, and others dealing with the patient who is overweight.

HLB

Charting the Development of Intermediate and Junior High School Boys in Motor Fitness and Its Correlates, by the Staff of the Department of Physical Education for Men, Purdue University. (West Lafayette, Indiana: Southworth's Book Store, 1960. 23 pp. Paper. $1.00.)

In 1958-59 the Department of Physical Education for Men at Purdue University conducted an 18 weeks physical education program for boys aged 10-12. This pamphlet describes in some detail the preliminary planning, selection of tests, analysis of data, development of the Purdue Motor Fitness Test Batteries, administration of the tests, and preparation of a Physical Education Profile Scale. Norms for the Purdue Batteries and the Cowell Athletic Aptitude Test are given. The booklet should be very useful to anyone connected with the physical training of boys of this age or in need of a guide to develop similar tests for other age groups or for girls.

PJR

The Sport of Judo as Practiced in Japan, by Kiyoshi Kobayashi and Harold E. Sharp. Second Revised Edition. (Rutland, Vermont: Charles E. Tuttle Company, 1961. 104 pp. Paper. $2.75.)

Since this reviewer has not seen the earlier editions of this book, he cannot comment on any changes that it may incorporate. As the title suggests, its purpose is to describe judo as practiced at the Kodokan. A brief history of the sport, a listing of the grading system, a description of the underlying principles, contest rules, and a glossary are included. The greater portion of the book, however, is composed of excellent photographs taken by Sharp, illustrating a number of the standard techniques. These are accompanied by a step-by-step description of the maneuver, a listing of the key points to be observed, and suggestions for modifications to adjust the basic movements to various reactions on the part of the opponent. This is superb teaching technique, and the reviewer knows of no book which better depicts basic offensive judo, especially at this price.

The weakness of the text is that it does not describe the counters to these offensive movements, although the chapter on osaekomiwaza does include a few defensive suggestions. By all means add this work to your library if you are the least bit interested in judo, but make sure that you also have Takagaki and Sharp's *Techniques of Judo* (reviewed here March-April, 1958) or you are apt to be at a loss when some uncooperative opponent assumes the offensive instead of holding still for your assault.

As a sidelight, it is noted that in the glossary *kiai* is defined as "show of spirit by yelling." It is of interest that an investigation of the physiopsychological considerations underlying its effectiveness has only recently been reported by Ikai and Steinhaus, the latter a member of the Editorial Board of this *Journal*. It may be found in the *Journal of Applied Physiology* for January, 1961.

PJR

Occupational Therapy in Rehabilitation, edited by E. M. MacDonald. (London: Bailliere, Tindall and Cox, 1960. Williams & Wilkins Co., Baltimore, exclusive U. S. agents. 348 pp. $8.50.)

The editor states the purpose of this book is to present an "outline of occupational therapy in rehabilitation" today. The material is offered as a guide for those who prescribe occupational therapy for patients in order that they may better understand "the scope of occupational therapy and the general principles on which it is based." There is a good summary of the history of occupational therapy, reviewing its early development as supportive therapy to its present scientific form of rehabilitation. There is no apparent conflict with American professional philosophy, but much of the information has to do with British rehabilitation agencies, legislation and publications.

This book is a general source of review for active therapists and a limited reference for new therapists. The terminology is not too technical and the chapters are well indexed; however, the few illustrations provided are not of great professional value. Because each section is written by a different authority, there is a variation in chapter format. Some sections presume the reader has considerable professional background while other sections do not.

There is an attempt to cover a broad range of topics and related subject matter. More space is given to the section on basic principles of psychiatric treatment than to other areas. It defines different types of mental illness, current medical practices, and includes illustrative case histories of occupational therapy procedures. There are chapters dealing with geriatrics, domiciliary occupational therapy, physical and neurological conditions, systemic disorders, social and industrial resettlement, and the assessment and evaluation of activities. The final chapters include information concerning administration, charts and forms, teaching techniques, and an extensive bibliography.

KSH

The Magnificent Scufflers, by Charles Morrow Wilson. (Brattleboro: The Stephen Greene Press, 1959. 105 pp. $4.50.)

It is the author's thesis that all that is good about modern wrestling derives from the collar and elbow style transplanted from Ireland to Colonial America and developed to its peak in Vermont in the 1880s. The book is less a history than a series of sprightly-told anecdotes centering around some of the leading New England wrestlers of the period from 1880 to 1900. Exactly what comprises the collar and elbow style is never made clear, and the text is woefully short on dates, references, citations, and other appurtenances of historical writing. Chapter VI, dealing with the modern professional, is particularly weak. Yet if it cannot be taken as competent historical writing, it will prove enjoyable reading for aficionados of the sport. At the least it will introduce to them a number of characters of whom they have never heard, even though it may leave them wondering how Whistler was able to grind his head into Muldoon's back while holding him supine.

The text contains a number of illustrations by Jon Corbino. As art they are highly acceptable, but this reviewer would cheerfully trade them for photographs of some of the individuals of whom the author writes.

Wilson possesses an enjoyable style and a respectable knowledge of the sport; it is to be hoped that he will join up with some one who has some idea of how history should be written and produce the authoritative work of which such a team should be capable. It would be well if it were published by the Stephen Greene Press, since it has here demonstrated its ability to produce a book which is exceptionally attractive in appearance and commendably free from typographical errors.

PJR

A Synopsis of Contemporary Psychiatry, Second Edition, by George A. Ulett and D. Wells Goodrich. (St. Louis: The C. V. Mosby Company, 1960. Pp. 309. $6.50.)

In handbook form, this volume provides an overall quick reference synopsis in which theory is kept to a minimum. The text briefly covers history taking, neurological examination, encephalographic examination, the value of psychological test procedures, clinical syndromes, including the brain syndrome, and disorders of psychogenic origin. Therapeutic measures are covered by chapters on various methods of therapy, both dynamic and somatic. The chapter on psychopharmacology has been markedly improved and the major tranquilizing and anti-depressant drugs are presented in tabular form.

Again, as in the First Edition, the authors have failed to include the corrective therapist as a member of the psychiatric team. This omission, which is common in many of the psychiatric texts, is based upon the failure to integrate the importance of psychological factors in the areas of physical medicine and rehabilitation.

The text covers a vast amount of material and is clearly written so that it will be equally useful to student and general practitioner as a quick reference to neurological and psychological syndromes. For the corrective therapist it provides the ready reference and background for material presented in medical seminars. The synopsis has an excellent index.

DCL

The Secrets of Judo, by Jiichi Watanabe and Lindy Avakian. (Rutland, Vermont: Charles E. Tuttle Company, 1961. 186 pp. Paper. $1.25.)

The first edition of this text was favorably reviewed in the November-December, 1960 edition of this *Journal*. It has now been reprinted as a paperback at a considerable saving in cost. So far as the reviewer is able to tell, all of the original material is included, the only difference being in the binding and the quality of the paper. At the price it represents an excellent bargain and is especially recommended to teachers of kinesiology, body mechanics, and similar subjects, as well as to those interested in judo itself.

PJR

Concepts of Medicine, Edited by Brandon Lush. (New York: Pergamon Press, 1961. 286 pp. $8.50.)

This delightful book covers the ideas and ideals of some of today's outstanding names in medicine and medical science in America and Great Britain. Edited by the Senior Medical Officer of the Medical Research Council of Great Britain, the papers are divided into three major sections: Concepts of Medicine, Concepts of Health and Disease, and Concepts of Medical Research. The reader will immediately recognize the names of Pickering, Hopps, Spence, Allen, and others. Included are essays dealing with modern medicine, specialization, evolution of the concept of disease, problems dealing with philosophy, methodology, some of the rewards of research in modern medicine, and other intriguing topics of interest to anyone with a philosophical bent, especially in medical science and research.

MLB

BOOKS RECEIVED

Health and Physical Education Microcards, 15 March 1961 Supplement to 1 October 1960 Bulletin. (Eugene: University of Oregon, 1960. 4 pp.)

Most recent additions to this valuable research tool.

Focus on Dance—I, edited by Gertrude Lippincott. (Washington, D.C.: A.A.H. P.E.R., 1960. 68 pp. Paper. $2.00.)

Contains a number of essays on the subject but none dealing with its therapeutic aspects.

News and Comments

EARLY SURGERY NO DETERRENT FOR LUNG TB VICTIMS

Early timing of surgery for tuberculosis of the lungs, within the first few months after drug treatment for the disease has begun carries no additional risk of post-operative complications, Veterans Administration-Armed Forces research indicates. This finding is expected to reduce the period of hospitalization for many TB patients who require surgery and allow them to return to productive employment sooner. The early surgery applies only to patients receiving their first course of treatment with anti-TB drugs.

Reporting to the recent Research Conference in Pulmonary Diseases of the VA and Armed Forces, Dr. Richard F. Kieffer of the Baltimore, Md., VA hospital said ten VA and Armed Forces hospitals submitted information on 95 patients for the study. All of these had lung cavities from tuberculosis that was still infectious when they were operated on after less than four months of drug treatment. The results were considered satisfactory in 91 of the 95.

The ten hospitals participating in this study are the VA hospitals at Baltimore; Minneapolis; Richmond; Madison, Wis.; Rutland Heights, Mass.; West Haven, Conn.; and Oteen, N.C.; the U.S. Naval hospitals at St. Albans, N.Y., and San Diego, Calif., and the Fitzsimons Army hospital, Denver.

TEXAS VALLEY AREA HOLDS SPORTS MEDICINE CLINIC

The first Sports Medicine Clinic for coaches, trainers and physicians in the Valley area of Texas was held in San Benito on March 15. The meeting was sponsored by the Cameron-Willacy County Medical Society with William F. Ross, M.D. acting as program chairman.

Participants in the clinic included Dr. Tom Shinkler who discussed orthopedic aspects of athletic injury, Dr. Marshall D. Henry who discussed neurological aspects, Billy Pickard, president of the Southwest Athletic Trainers Association who spoke on the trainer's obligation in conditioning and training and led a taping session, and Karl K. Klein who discussed problems of reconditioning and injury prevention through exercise techniques.

COMPLETE CLINICAL TRAINING

L. to R., Donald Swan, CCT, clinical training supervisor, Hans Slade, Kenneth Totas, Fred Schwartz, Elliot Goldstein and Thomas Rowley, CCT, Chief Corrective Therapy.

The four students in the photo above are matriculating at the School of Education, Boston University, and have recently completed GM&S clinical training at the Veterans Administration Hospital, West Roxbury, Mass. The students will soon begin their NP training at the VAH, Brockton.

'HALF WAY HOUSES' SHOW GAIN

A bold new approach to providing "homes away from home" for recovering mental patients is proving highly successful in the Veterans Administration. Sixteen "half-way houses" where patients can complete the final stage of their recovery have been establishd as cooperative ventures betwen VA psychiatric hospitals and nearby communities across the nation. More are planned by other VA hospitals and communities for the near future.

Most of the houses are operated by private individuals, and with few exceptions the veterans pay for their maintenance from their own funds. Most have either full-time or part-time paying jobs in the community, although they are not yet ready to leave the security of group living.

The VA experience shows half-way houses help assure recoveries, free hospital beds, and save taxpayers' money. A newer trend in psychiatry in this country, the half-way house furnishes a living arrangement intermediate between sheltered life in the hospital and the responsibilities of truly independent living. For many mental patients who must attempt the transition from the hospital to the community, the favorable environment often makes the difference between healthful readjustment and relapse into illness again.

VA patients who go into half-way houses generally have reached a fairly good level of recovery. They may come and go from the houses as they wish and need live there only until they gain the self-confidence necessary for making their own way in the world. But the houses are associated with the VA hospitals so that social workers and psychiatrists can give help, and the residents of the homes have the companionship and friendly encouragement of operators of the houses and of the other residents who understand their problems.

Residents who have been in the homes long enough to adjust to life outside the hospital help the newcomers in their first steps toward independence.

The VA hospitals that have half-way house programs are located at Los Angeles and Sepulveda, Calif.; Topeka, Kans.; Murfreesboro, Tenn.; North Little Rock, Ark.; St. Cloud, Minn.; Chillicothe, Ohio; Brockton, Mass.; Danville, Ill.; Fort Lyon, Colo.; Gulfport, Miss.; Marion, Ind., and Montrose, N. Y.

ANNOUNCE FELLOWSHIP IN HOSPITAL RECREATION

Mississippi Southern College announces that it is accepting applications for the Forest Park Foundation Fellowship in Hospital Recreational Service. A $2,000 scholarship is awarded to an individual seeking a Master of Science degree in Hospital Recreational Service. Interested persons should write, Dr. Jay S. Shivers, Head, Dept. of Recreation, Station A, Box 235, Mississippi Southern College, Hattiesburg, Miss.

JOKL REPORT READ TO SENATE GROUP

A memorandum originally prepared and sent to members of the UNESCO Research Committee International Council of Sport and Physical Education and written by Ernst Jokl, M.D. of the University of Kentucky was read to a Senate sub-committee by Sen. Hubert Humphrey recently. The memorandum was introduced in connection with a discussion on developing national programs of physical fitness, a subject of concern to the Subcommittee on Reorganization and International Organizations of the Committee on Government Operations before whom the memorandum was read.

The Jokl report underlined a philosophy toward research in sport and physical education which would direct it into social, esthetic, educational and rehabilitative channels as well as the purely physical. Specifically, the memorandum described five research projects which the UNESCO Research Committee will undertake:

1. To investigate the problem of physical education in schools. This would be accomplished by a "comprehensive model experiment" which would yield data on "didactic, developmental, physiological, clinical, psychological, sociological and administrative" areas.
2. To study the inhibitory influence of sustained physical activity upon the aging process.
3. To study the exercise factor as used in rehabilitation in order to formulate new techniques as well as to apply and analyse existing principles.
4. To study the cultural aspects of sport and physical education, particularly in regard to inter-personal and inter-group relations.
5. To clarify the "inherent linkage of differentiated motor acts with such introspective events as motivate and accompany them."

PSYCHOLOGY RESEARCH CHIEF APPOINTED

Dr. H. Elston Hooper has been appointed chief of psychology research for the Veterans Administration, in Washington, D. C. Dr. Hooper has been chief of the central research laboratory at the Augusta, Ga., VA hospital for the VA's cooperative psychological research, chairman of the executive committee for this multi-hospital study, and coordinator of research and training in the hospital's psychology service. He also was clinical assistant professor of psychology at the Medical College of Georgia.

In this newly created position in the research service of the VA Department of Medicine and Surgery, Dr. Hooper will coordinate the agency's research in psychology nationwide.

IN MEMORIAM

WILL O. BEARDEN

Will O. Bearden, Chief, Corrective Therapy, at the Dallas, Texas Veterans Administration Hospital died of a heart attack on April 27. He was an active member of the Association for Physical and Mental Rehabilitation and past president of the Texas-Louisiana Chapter.

Mr. Bearden attended Texas A & M College and served as NCO in charge of the convalescent training program at the Army Air Force Hospital in Wichita Falls from 1942-1946. Upon his discharge from service, he was appointed to the Dallas position which he held for nearly fifteen years.

The Texas-Louisiana Chapter has sent a donation to the association scholarship fund in memory of Mr. Bearden.

CALIFORNIAN WINS FIFTH ASSOCIATION SCHOLARSHIP AWARD

The fifth scholarship award of the Association for Physical and Mental Rehabilitation has been presented to R. Vern Dickinson of the University of California at Los Angeles. Mr. Dickinson is a senior at the university, majoring in physical education with a minor in German. He has been preparing himself for a vocation in either corrective therapy or adapted physical education for the past three years and intends to take his graduate work in this field at UCLA beginning in the Fall of 1961.

Mr. Dickinson has been on the Dean's Honor List, a "straight A" student throughout his career at UCLA, and a member of the varsity wrestling team. He is 26 years of age, married and a former Army paratrooper.

Former winners of association scholarships include:

1956—Robert Jones (Springfield College)
1957—David Bilowit (NYU)
Margaret McPherson (Columbia Univ.)
1958—Sam Albinder (Adelphi Coll.)

RESEARCH UNIT HEADED BY DR. SCHNAPER

Dr. Harold W. Schnaper of the Mt. Alto Veterans Administration Hospital in Washington, D.C., has been appointed to the newly created post of Chief of Research in Internal Medicine for the VA, at the agency's Central Office in Washington.

Dr. Schnaper has been serving as the Mt. Alto Hospital's assistant director of professional services for research and education and its assistant chief of medicine. He also is Assistant Professor of Medicine at the Georgetown University School of Medicine.

In his new post, he will coordinate the VA's multi-hospital cooperative studies in high blood pressure, hardening of the arteries, diabetes, gastroenterology, endocrine disorders, and automatic cardiovascular data processing and the agency's individual research projects in internal medicine, nationwide.

JOINT COMMISSION PRESENTS FINAL REPORT TO CONGRESS

The most exhaustive study on mental illness ever conducted in this country was presented to the Congress and Governors of the States on March 24 in the form of a 100,000 word report by the Joint Commission on Mental Illness and Health, Jack R. Ewalt, M.D., Director. The study originally conceived by Kenneth E. Appel, M.D., former president of the American Psychiatric Association, was authorized by the Mental Health Study Act of 1955 and supported by federal grants and private contributions totaling over $1,500,000.

Ten separate study projects were undertaken by the Commission with a separate monograph being published for each project. The entire study took five years for completion and will be published by Basic Books, Inc. under the title *Action for Mental Health.*

The study pointed out that treatment of the mentally ill has lagged behind the objectives sought for it, behind public demand and behind attacks made on other major health problems. The Commission conducted an extensive research on the causes for this failure, pointing out the inadequacies of typical custodial care in most State hospitals, the tendency of society to reject the mentally ill, and the shortage of mental health professional manpower. It decried the belief that a crash program of research could bring about a drastic change in the problems of mental illness and mental health, and expressed the belief that only an increase in basic research could eventually develop preventions or cures of the problem.

In calling for a national program against mental illness, the Commission pointed out that such a program must be scaled to the size of the problem, "imaginative in the course it pursues, and energetic in overcoming both psychological and economic resistance to progress in this direction." It called for doubling Federal, State, and local expenditures for public mental patient services in the next five years and tripling them in the next ten. Funds would be raised by a Federal program of matching grants to States according to the Commission's recommendations.

NEW TECHNIQUE HELPS DIAGNOSE LUNG DISEASES

Techniques for distinguishing between two types of lung disease, one usually cured by surgery and the other best treated with medical therapy alone, have been reported by a Veterans Administration research group. Symptoms of these two conditions, bronchitis and bronchiectasis, are so similar that doctors often cannot differentiate between the diseases clinically. However, bronchitis may even be made worse by surgical treatment.

The study was conducted by John E. Rayl, M.D., with E. D. Peasley, M.D., Lawrence Mucci, M.D., and John T. Joyner, M.D., all of the Veterans Administration hospital at Oteen, N.C. In the research, rapid speed motion pictures were made of the bronchial tubes after they were outlined with a material which casts an x-ray shadow.

A medical motion picture in color with sound, based on findings of the study, was first shown at the recent Research Conference in Pulmonary Diseases of the VA and Armed Forces, in Memphis, Tenn.

Copies of the motion picture, entitled "Bronchitis and Bronchiectasis: Differentiation for Treatment," are available from the Pfizer Medical Film Library, 267 West 25th Street, New York 1, N.Y., for distribution to physicians throughout the world. A limited number of prints also will be available from the VA Central Office film library in Washington, D.C., for distribution to VA stations only.

The film reveals that recurrent attacks of acute bronchitis can produce changes in the bronchial tubes that may be interpreted as bronchiectasis. These changes disappear after satisfactory treatment with antibiotics and other medical measures. Surgery is not only contraindicated, but if performed may be followed by complications. In contrast, the changes in bronchiectasis are permanent, and, when it is sufficiently localized, surgical removal usually results in a cure.

SUICIDES NOT IMPULSIVE SAY PSYCHOLOGISTS

Suicide generally does not occur suddenly, without warning, Veterans Administration studies show. Dr. Edwin S. Shneidman and Dr. Norman L. Farberow of the Los Angeles, Calif., VA center, who have made extensive studies of suicide, say most persons who kill themselves give subtle clues to their intentions beforehand. The two VA psychologists believe many suicides might be prevented if these clues could be more widely recognized and understood. However, this is not an easy matter, they point out.

Suicide, although a serious public health problem and the eighth leading cause of death among male Caucasians in the United States, has been considered a "tabooed" area, they say.

"In many ways, the current state of knowledge regarding suicide is similar to that which existed regarding venereal diseases and mental illness not so many decades ago," say Dr. Shneidman and Dr. Farberow.

"Although it might appear that suicide in or out of a hospital would be easy to predict and diagnose, this often is not so. There is confusion about the characteristics of suicidal behavior, and relatively little scientific research has been done on the problem of suicide. Even the warnings of doctors and the most obvious indications of suicidal intents often are not taken seriously by relatives and friends."

The two VA psychologists believe the public needs to be told more about suicide.

There has never been a wide campaign against suicide, as there has been against other leading causes of death, they point out, and there appears to be relatively little organized public interest in the subject, considering the importance of the problem. Dr. Shneidman and Dr. Farberow also believe that more research on suicide should be done and that the available scientific information on suicide should be more widely disseminated to personnel in the medical field.

"If suicide is to be prevented, the public's numerous misconceptions about it must be dispelled, scientific information on the subject must be furnished not only to physicians but to nurses, social workers, and others who come in contact with patients, and suicide prevention must become everyone's problem and responsibility," they say.

They say one of the most common of the many misconceptions about suicide is that people who make threats of or unsuccessful attempts at it seldom actually kill themselves. On the contrary, such a threat or attempt is a significant indication that the person may actually commit suicide the next time he is seriously disturbed. Some of the other common misconceptions about suicide are:

1. A state of deep depression always precedes suicide. Not so, according to Dr. Shneidman and Dr. Farberow. Although depression is the main psychiatric symptom that should be associated with the possibility of suicide, depression is not always present or manifest in those who commit suicide. Thus friends of those who kill themselves sometimes comment, "I can't understand his doing that; he didn't seem unhappy."

2. Improvement after an emotional crisis means the risk of suicide is over. Dr. Shneidman and Dr. Farberow's research shows this is untrue. In their studies, almost half of the individuals who were in an emotional crisis, and subsequently committed suicide, did so within 90 days of having passed the crisis and after they had seemed to be on the way to recovery. "Thus there seems to be a critical period of at least three months right after the emotional crisis during which physicians, relatives, and others must be especially cautious and watchful," the VA psychologists say.

3. All suicidal individuals are mentally ill. False, Dr. Shneidman and Dr. Farberow say. Although the majority of individuals who commit suicide are seriously disturbed emotionally or have character disorders, they are not mentally ill.

4. Suicide is limited to a specific class of people. On the contrary, say the two VA psychologists, suicide appears at all economic levels. It is not limited to the very rich or to the very poor.

5. Suicide can be controlled by making it a crime. Dr. Shneidman and Dr. Farberow say such legislation has been known to increase the number of suicides. They point out that it may tend to make the individual's attempt at suicide a more serious one, so that he will actually kill himself and not pay a legal penalty for his attempt, or that it may discourage suicidal persons from seeking proper advice and treatment. On the other hand, Dr. Shneidman and Dr. Farberow believe that legislation concerning specific aspects of suicide prevention—distribution of certain drugs, for example—might be well advised.

They have been studying suicide for the past ten years and are co-directors of the Suicide Prevention Center in Los Angeles, a clinic supported by a United States Public Health Service project grant. As a part of VA's over-all medical program, studies of suicide were begun by Drs. Shneidman and Farberow about two years ago. As a result of their findings, the VA is undertaking a program aimed at helping prevent suicide by stimulating scientific inquiry on and discussion of the subject by its hospital personnel.

Medical bulletins based on Dr. Shneidman and Dr. Farberow's research will be distributed by the VA to its 170 hospitals for study by personnel who come in contact with patients.

ODDO, MURPHY RENOMINATED FOR ASSOCIATION OFFICE

The Nominating Committee of the Association for Physical and Mental Rehabilitation, Carl B. Peterson, Chairman, has renominated Vincent Oddo of Chicago and John B. Murphy of Chillicothe, Ohio for the offices of treasurer and secretary, respectively in the general assembly election to be held during the week of the Tri-Organizational Conference in July. Both Mr. Oddo and Mr. Murphy are unopposed for election. The committee also suggested Mr. Murphy's name as a candidate for second vice president.

Other candidates nominated include: (for second vice president) Lester Burrowes of Clinton, Miss. Mr. Burrowes, who has served three terms (1957-60) as secretary of the Association, is a graduate of Concord State Teachers College and began his professional career as a science teacher and athletic coach prior to WW II. After two years of service in the Army he entered corrective therapy at the Jackson, Miss. VAH. He has served both as president and secretary-treasurer of the Southeastern Chapter and been chairman of the Constitution and Survey committees of the national organization. For third vice president, the names of Harry Hicks of West Chicago, Ill. and Robert McIntyre of Salisbury, N.C. have been submitted. Mr. Hicks is a graduate of the Univ. of Illinois and received his Master's from the Univ. of Iowa. He has ten years experience of high school teaching, three years in the Navy Medical Corps and 15 years as a corrective therapist. Mr. McIntyre is a graduate of Middle Tennessee State College and received his Master's at the same institution in 1952. He was a C.T. at Murfreesboro from 1946 to 1953 and for the past eight years has been Chief at the VAH, Salisbury, N.C. Mr. McIntyre served as Southeastern Chapter president and as secretary-treasurer, each for one term and has served two terms as a member of the representative assembly of the national organization.

The office of first vice president will be filled by election by the representative assembly with automatic advancement to the office of president two years hence.

CORRECTION

The following footnote was deleted from the article "The Deep Squat Exercise as Utilized in Weight Training for Athletics and its Effect on the Ligaments of the Knee" by Karl Klein which appeared in the *Journal*, 15:1, 6-11, 23, Jan.-Feb., 1961:

This investigation was supported in part by a research grant from the Office of Vocational Rehabilitation, Department of Health, Education and Welfare, Washington, D.C.

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